POLICY RESEARCH WORKING PAPER 1507

Coping with Too Much of a Good Thing

Policy Responses for Large Capital Inflows in Developing Countries

Morris Goldstein

Economic policy on capital inflows does not lend itself to one-size-fits-all policy prescriptions, but in the design of policy strategies for dealing with the inevitable volatility of such flows, a premium should be put on credibility, resilience, and flexibility.

The World Bank
International Economics Department
International Finance Division
September 1995

Summary findings

In discussing the causes and consequences of large capital inflows to developing countries, Goldstein emphasizes that:

• Although there are legitimate grounds for an optimistic long-term outlook on private capital flows to developing countries, there is little to suggest that the volatility of capital flows will end. In designing policy strategies to accommodate this volatility, a premium should be put on credibility, resilience, and flexibility.

• Country differences notwithstanding, host countries need to respect the basics of adjustment and finance in designing their policy response to large inflows.

Host countries that want to keep using the nominal exchange rate as their key nominal anchor and that do not want to accept much appreciation in their real exchange rate must be prepared to tighten fiscal policy. This is the most reliable way to reduce aggregate demand, keep inflation in check, and limit deterioration of the current account.

Regarding sterilization policy, domestic interest rates will be higher and the size of the inflow will be larger with sterilization than without it. Not that sterilization necessarily need be avoided; in the early stages of inflow, it can help moderate or even offset the induced expansion of domestic credit. But with high capital mobility, sterilization becomes more expensive and less effective the longer it is used.

Effective regulation and supervision are important in ensuring the best use of large inflows of foreign resources. It makes a big difference, for example, if banks use their higher reserves to lend for productive investment and human capital formation than if they use them to fund speculative activities that eventually translate into nonperforming loans (and perhaps a large public sector liability as well). Careful assessment of credit risk and of maturity mismatches are essential if banks are to help the private sector earn a rate of return greater than the cost of capital. Similarly, good disclosure and accounting standards are essential for accurate pricing of risk in both banking and securities markets. These and similar measures are worth implementing even without large capital inflows.

Beyond dealing with surges in capital inflows, host countries must decide the optimal speed at which they wish to move toward full capital account liberalization.

This paper — a product of the International Finance Division, International Economics Department — is part of a larger effort in the department to analyze policy implications of private capital flows to developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room N3-046, telephone 202-473-1047, fax 202-522-3277, Internet address hvo1@worldbank.org. September 1995. (45 pages)

Coping with Too Much of a Good Thing: Policy Responses for Large Capital Inflows to Developing Countries[1]

by
Morris Goldstein
Senior Fellow
Institute for International Economics

[1] I am indebted to Paul Armington, William Cline, Jeff Frankel, Kwang Jun, Peter Montiel, and John Williamson for helpful comments on an earlier draft.

TABLE OF CONTENTS

I. Introduction

Any international economist who at the height of the debt crisis foresaw that developing countries would be facing in the early 1990s a surge of private capital inflows, and that the host countries would regard these capital inflows as a mixed blessing, might well have been encouraged to go into analysis -- and not the kind of analysis carried out in economics departments. Yet as the title of this paper suggests, such a forecast would have been right on the mark. The fact is that a group of developing countries has been wrestling over the past five years (1990-94) with how to conduct macroeconomic, exchange rate, and supervisory policy in the face of a cumulative, net (long-term) private capital inflow that is on the order of $540 billion.[1]

This time, it has been portfolio capital (bonds and equities) and foreign direct investment -- and not bank loans -- that have led the way; it has been the private sector -- and not governments-- that has been the major borrower; it has been Asia along with Latin America -- not just the latter region alone -- that has been the main destination for such flows; and it has been creditors -- not debtors -- that have borne most of the currency risk. In another contrast with the buildup to the debt crisis, this time the capital inflow has been preceded or accompanied by significant progress in macroeconomic policy reform and in liberalization in the developing countries. And economic growth -- such a key problem in indebted countries during the debt crisis and its immediate aftermath -- has been more buoyant this time.[2]

Still, some of the same concerns that surfaced in earlier capital inflow episodes about safeguarding macroeconomic stability, about losses in competitiveness, about a weakening of domestic saving efforts, about preventing inflows from exacerbating strains in the domestic banking system, and about overborrowing and unsustainable current account positions, have been at the center of the policy debate in this episode as well. The recent crisis in Mexico, by underlining both the volatility of private capital flows and the potential for contagion to other developing-country borrowers, has if anything added to these concerns.

---

[1] This figure is taken from the World Bank's World Debt Tables, 1994-95 (World Bank [1994]). Only estimated figures are yet available for 1994 and these do not take into account any significant net outflow from Mexico near the end of 1994. Also note that the World Bank figures cover only long-term private net flows. If an estimate of short-term net private capital flows is added to the long-term numbers, the cumulative total for 1990-94 probably lies close to $630 billion.

[2] The high-inflow developing countries of Asia recorded an average growth rate of better than 7 percent over the 1990-94 period, while growth in the high-inflow countries of Latin America was above 2 percent (IMF [1994]).

This paper provides a nontechnical summary and critique of the existing literature on the causes and consequences of these large private capital inflows to developing countries.[3] The emphasis is on the policy choices faced by authorities, and on the lessons of country experience.

The plan for the paper is as follows. Section II outlines the broad patterns in recent private capital inflows (size, composition, regional and country concentration, and cross-country differences). It also summarizes the macroeconomic developments that have most typically accompanied such capital inflows. Section III discusses the factors -- both external and internal -- that appear to be responsible for the resurgence of these private capital inflows, and considers what these factors imply about "sustainability" of flows over the medium-term. Section IV explains the kinds of challenges and concerns raised by large capital inflows, and analyzes the policy options employed by host countries to deal with such inflows. Finally, Section V offers three policy lessons that seem justified by recent experience.

II. Patterns: Private Capital Inflows and Associated Developments

Capital flows

This paper analyzes private net capital flows to developing countries. Private flows now account for approximately three-quarters of all long-term capital flows to developing countries (World Bank [1994]). The decision to concentrate on private flows means that (aside from China and India) the group of host countries consists predominantly of middle-income developing countries. Because low-income countries rely much more on official flows to meet their external financing needs and because official net flows have not shown the same surge in the 1990s as private flows, the behavior of official flows and its implication for low income countries require separate treatment.

There are four characteristics of recent, private net capital inflows to developing countries that warrant explicit mention (see World Bank [1994], Calvo et al [1995, 1993], Fernandez-Arias and Montiel [1995]).

First, the size of the private capital inflow into developing countries over the past five years has been large; how large depends on what you compare it to. Tables 1 and 2 lay out the relevant figures. The cumulative private net (long-term) inflow over the 1990-94 period amounts to roughly $540 billion (adding official flows would double that total). Particularly large

[3] The task is made easier by the availability of a group of excellent recent survey articles (Calvo et al [1993,1994a,1995], Corbo and Hernandez [1993], Fernandez-Arias and Montiel [1995], IMF [1994], Khan and Reinhart [1995], Schadler et al [1993], Wang and Schilling [1995], and World Bank [1994]).

Table 1. Private Net Long-Term Capital Flows to All Developing countries, 1989-94 (US$ Billions)

	1989	1990	1991	1992	1993	1994[p]	cumulative 1990-94[p]
Total net private flows	41.9	45.5	62.9	102.7	159.2	172.9	543.2
Private net debt flows	12.7	15.0	18.5	41.4	45.7	55.5	176.1
Commercial ban	0.8	0.1	3.9	12.8	-2.2		
Bonds	5.3	3.4	12.5	12.9	42.1		
Suppliers	1.1	7.3	-2.2	0.0	2.0		
Other	5.5	4.2	4.3	15.7	3.8		
Foreign direct investment	25.7	26.7	36.8	47.1	66.6	77.9	255.1
Portfolio equity investment (estimated)	3.5	3.8	7.6	14.2	46.9	39.5	112.0

p=preliminary

Source: World Bank [1994].

Table 2. Comparison of Periods, Private Net Long-Term Capital Flows to All Developing Countries

	Pre-Debt Crisis Period (1978-81)	Debt Crisis Period (1982-89)	Recent Surge Period (1990-93)
Size of Inflows			
Total, US$ billions, annual average	53.5	34.6	92.6
as % GNP	2.7	1.2	2.2
as % Exports	12.3	5.9	10.4
Asset composition of inflows (in percent)			
Equity	18.1	41.0	67.7
Debt	81.9	59.0	32.3
Foreign direct investment	18.0	38.7	51.1
Portfolio equity flows	0.1	2.3	16.4
Portfolio debt flows	3.3	7.6	15.3
Other debt flows	78.7	51.4	17.3
To the private sector	38.3	40.7	84.6
To the public sector	61.7	59.3	15.4
Regional composition of inflows (in percent)			
Sub-Saharan Africa	8.7	7.2	1.5
East Asia and Pacific	14.8	27.9	42.2
Latin American and the Caribbean	53.9	29.9	33.2
Middle East and North Africa	7.7	10.1	0.9
South Asia	1.3	8.1	3.6
Europe and Central Asia	13.6	16.8	18.5

Source: Fernandez-Arias and Montiel [1995].

increases were recorded in 1992 and 1993; based on preliminary figures for 1994 ($170 billion, prior to the Mexican crisis), the acceleration in private flows has clearly ended.[4]

Whether expressed in absolute terms or scaled according to host countries' GNP or exports, private flows over the 1990-94 period were much larger than those during the preceding five (or eight) years when many of these countries (at least those in Latin America) had little access to voluntary international capital flows. On the other hand, recent flows are somewhat smaller (in scaled terms) than those which occurred during the four year period (1978-81) immediately preceding the debt crisis.[5] And even in the year (1993) when recent private flows attained their highest value (relative to GNP), they never financed as much as 5 percent of domestic investment for developing countries as a group -- highlighting the dominant role played still played in that regard by domestic saving.

Second, the composition of flows has changed dramatically from that prevailing during the debt and pre-debt crisis periods in several respects; see Table 2. As noted earlier, in the late 1970s and the 1980s it was debt flows, bank loans, and public-sector borrowers who dominated private net capital flows. In contrast, in the 1990s, it is non-debt-creating flows (foreign direct investment and portfolio equity), bonds, and private-sector borrowers that have ruled the roost. The fastest growing components have been bonds and portfolio equity flows, both of which increased more than tenfold since 1990. Asset composition ratios are now almost the reverse image of what they were in the late 1970s.

Third, there remains considerable country and regional concentration in the destination for private flows. The five largest recipients (in absolute amounts) of private capital inflows over the 1990-94 period took approximately 60 percent of the total, and the top 20 host countries, over 80 percent. High concentration also characterizes the components of the total. China by itself was the recipient of nearly 30 percent of all foreign direct investment in developing countries in 1990-94, and 50 percent of the total was accounted for by only five countries. Similarly, on the order of 40-50 percent of total long-term bond flows and of portfolio equity flows went to three or four countries. By region, East Asia and the Pacific led the parade (42 percent of total flows), with Latin America and the Caribbean (33 percent) and Europe and Central Asia (18 percent) next in line (see Table 2). For comparison, in the pre-debt crisis period (1978-81), Latin America and the Caribbean got the more than half (54 percent) of the total, while the other two together accounted for only a quarter.

Fourth, within the group of host countries, there have been enormous differences across countries in the extent and modalities of the net private capital inflow. In terms of absolute

---

[4] Again, the preliminary 1994 figure should be treated with caution.

[5] Fernandez-Arias and Montiel [1995].

amounts, China and Mexico headed the list of recipients. In per capita terms, the leaders were Hungary and Malaysia. Expressed relative to GNP, Malaysia, China, Thailand, Chile, and Mexico had average net inflows considerably larger than those for Brazil, Korea, and the Philippines (World Bank [1995]). By region (again expressed relative to GDP), Asia and the East Pacific have experienced larger inflows than Latin America and the Caribbean, or than any other regional group. Timing wise, Asian developing countries (most of whom never really lost access during the debt crisis) experienced the surge in capital inflows first (late 1980s), followed by Latin America (1990), and more recently by other regions; of particular note, the transition economies of Central and Eastern Europe, witnessed a $21 billion reversal (from deficit to surplus) in their capital account position as between 1991 and 1993 (see Calvo, Sahay, and Vegh [1994]). Maturity strategies differed as well, with Mexico, for example, increasing its reliance on short-term flows, while China and Korea took the opposite tack.[6] By region, short-term flows were more important for host countries in the Middle East than for those elsewhere.

Accompanying developments

Interest also attaches to the macroeconomic developments in the host countries that have accompanied such capital inflows. I say "accompanied" because there has as yet been no attempt in the literature to separate the independent influence of capital inflows on these developments from the influence of "other" factors. With that caveat in mind, several broad regularities are worth noting. To begin with, the normal case is for a significant share of the capital inflow to be channeled into an increase in international reserves. Fernandez-Arias and Montiel [1995], for example, find that in half of the 12 countries experiencing the largest inflows relative to the size of their economies, reserve accumulation accounted for about 40 percent of the inflow. Calvo et al [1993, 1994a, 1995] likewise document a similarly high propensity to accumulate international reserves in their sample of Latin American and Asian host countries.

The increase in international reserves reflects in part the conscious policy decision in host countries not to allow the classical adjustment mechanism to a capital inflow to operate unimpeded, that is, authorities are not willing to be completely passive with respect to either an appreciation of the nominal exchange rate or a monetization of the capital inflow. Usually, and particularly at the beginning of the surge period, host-country authorities engage heavily in sterilized exchange market intervention, that is, they first purchase foreign exchange and then act to offset or "sterilize" the effect on the money supply by selling domestic bonds or by increasing (banks') reserve requirements. If the capital inflow persists, adjustment generally becomes harder to resist and we eventually observe some combination of appreciation of the real exchange rate, an increase in monetary expansion, an increase in domestic absorption (that is, increases in

[6] For host countries as a group, there has been no clear trend in the maturity composition of private capital flows. Short-term flows represented roughly a quarter of total flows in 1990-94 versus 13 and 40 percent during the 1982-89 and 1978-81 periods, respectively; see Fernandez-Arias and Montiel [1995].

consumption and investment spending) along with a decrease in domestic saving, and a widening of the current account deficit. Again, there are considerable differences across host countries in each of these dimensions. But the deterioration in the current account is almost always smaller than the net capital inflow itself, so that international reserves increase.

Appreciation of the real exchange rate reflects appreciation of the nominal exchange rate (under a free float or crawling peg cum exchange rate band) and/or an increase in the host country's relative inflation rate (particularly for nontradable goods) spurred on by the monetary/spending effects of the capital inflow. Some host countries (Argentina, Mexico, Colombia) experienced very large (15 percent or more) real appreciations (relative to the two year period preceding the beginning of the inflows), while others (China, Malaysia, Costa Rica, Korea, Brazil, Indonesia, Venezuela) either recorded real exchange rate depreciations or accepted only small appreciations. On the whole, real exchange rate appreciation (both during the surge period itself and relative to the pre-surge period) has been more widespread in Latin American host countries than in Asian ones; indeed, as a group, high-inflow Asian countries actually recorded a depreciation in their real exchange rates during the surge period (IMF [1995]). Not coincidentally, Asian host countries were generally better able to maintain strong export performance during the surge period than were high-inflow countries in Latin America.

On the monetary front, while the large majority of host countries experienced an increase in the growth of real money balances (Calvo et al [1995]) and a drop in real interest rates, there is little indication of a generalized sharp acceleration of inflation during the surge period. The implementation of anti-inflationary monetary programs either before or during the surge period (e.g., Bolivia, Chile, Mexico), relatively heavy reliance on sterilized intervention to limit the monetary effects of the inflow (e.g., Chile, Colombia, Hong Kong, Korea, Mexico, the Philippines), appreciation of the nominal exchange rate in some quarters (e.g., Chile and Mexico), and, in a few cases (e.g., Indonesia and Thailand), tightened fiscal policy during the surge period, seem to account for that outcome. On the whole, Asian host countries sterilized more of the capital inflow and were more successful at keeping inflation under firm control during the surge period than were their Latin American counterparts.

An upsurge of equity prices was another common phenomenon in host countries, particularly where portfolio equity flows represented a large share of the total capital inflow. The IFC's composite index of stock prices in 15 emerging markets exhibits a strong trend increase beginning in early 1991, and a dramatic acceleration in 1993 when these markets easily outperformed their industrial-country counterparts (79 percent average return for the IFC composite index versus 7.5 percent for the U.S. S&P 500 index). Equity price corrections occurred in 1992 and in 1994. Increases in real estate prices surfaced in many host countries as well.

Increases in domestic absorption have been the norm in host countries. Increases in investment were particularly large in Chile, Venezuela, Thailand, Indonesia, Colombia, and

Bolivia. Increases in consumption were also widespread, and took up a relatively large share of the increase in absorption in Argentina, Mexico, Turkey, Portugal, and Colombia. By region, the increase in absorption was tilted more toward investment in Asian high-capital inflow countries than in Latin American ones. Decreases in domestic saving more often than not accompanied increases in absorption, especially in Latin America.[7] Reflecting these absorption and saving trends, host countries typically experienced a deterioration of their current account positions, with the widening of current account deficits being more pronounced in Latin American host countries than in Asian ones. In 1994, at least four host countries (Hungary, Mexico, the Philippines, and Thailand) were running current account deficits equal to or greater than 5 percent of GDP.

Finally, most researchers detect a tendency for economic growth to increase somewhat during the surge period, although comparisons with the pre-surge period elicit mixed results (depending on both the country composition of the capital inflow group and the time period used to define the pre-surge period).[8]
Among those high-inflow countries experiencing strong increases in growth were China, India, Argentina, Venezuela, Thailand, and Turkey; on the lower end of that spectrum (in terms of changes in growth rates), were the Philippines, Portugal, Malaysia, Korea, Bolivia, Brazil, Indonesia, and Chile.

III. Causes and Sustainability

Policymakers cannot make decisions about how best to deal with large capital inflows without first coming to some view about what has driven these inflows in the past and about what is likely to be driving these flows in the future. Accordingly, much of the literature on capital inflows has been directed at making such a diagnosis. In this section, I first summarize the main causal factors (low interest rates in creditor countries, policy performance in host countries, and evolution in the operating environment), and then go to offer some remarks on sustainability.

Causal factors

---

[7] According to IMF [1995] figures, total saving (as a percent of host country GDP) over the 1990-94 period increased in high-inflow Asian countries relative to its average value during 1983-89; in contrast, total saving decreased in high-inflow Latin American countries over the same period.

[8] Some of the growth effects may be related to the composition of capital inflows. In this connection, Husain and Jun [1992] find that foreign direct investment flows had greater effects on growth (in ASEAN and South Asian developing countries) than did foreign aid flows. Fry [1993] investigates the effect of foreign direct investment flows on investment, saving, and economic growth in 16 host developing countries. In brief, he finds that the effects of FDI flows are more positive in five Pacific Basin economies than elsewhere -- a result he attributes to the lower level of distortions in the former.

Topping the list of likely suspects is low interest rates and recession in major creditor countries, with particular emphasis on the United States.[9] Short-term (nominal) interest rates in the United States fell from over 7 1/2 percent in 1990 to about 3 percent in 1993, as the Federal Reserve eased monetary policy to spur recovery from the recession (recall that U.S. real GDP grew by only 1.2 percent in 1990 and declined by 0.6 percent in 1991) It was not until February 1994 that U.S. short-term rates began to move in the other direction. Taking the industrial countries as a group, the weighted aggregate short-term interest fell from over 9 percent in 1990 to a little over 5 percent in 1993.[10] Long-term interest rates in the G-10 countries show somewhat less variation but essentially followed the same trend, declining (on a weighted average basis) from about 9 1/2 percent in 1990 to 6 1/2 percent in 1993. Substituting real for nominal interest rates, or interest rate spreads (between creditor and debtor countries) for interest rate movements in creditor countries alone, or relative stock market performance for rate of return differentials on fixed-income assets, doesn't alter the qualitative nature of the conclusion (Calvo et al [1993]).

Lower interest rates in creditor countries should induce greater capital flows to developing countries through two channels.[11] First, other things equal, it makes investing at home less attractive at the margin than investing abroad; this is the asset substitution channel. Second, it improves the creditworthiness of debtor countries either by reducing the present discounted value of their contractual debt payments (for example, where debt carries floating interest rates) and/or (more importantly) by increasing the present discounted value of the resources available for external payments;[12] this is the creditworthiness channel.

Consistent with these a priori arguments, available empirical studies suggest that foreign interest rates -- especially U.S. interest rates -- are capable of explaining much of the surge in capital inflows in the 1990s. The pioneering work of Calvo et al [1993] established that international reserve accumulation and real exchange rate appreciation in Latin American host countries were highly correlated with various U.S. financial variables. Later studies (Chuhan et al [1993], Fernandez-Arias [1994], Frankel [1994], Dooley et al [1994]), using data for a wider

---

[9] Chuhan et al [1993] report that the United States was the source of about half of bond flows and two-thirds of net equity flows to Asian and Latin American host countries in 1992.

[10] The evolution of LIBOR follows the same pattern.

[11] Temporarily low interest rates may also encourage borrowers to increase their issuance of bonds to take advantage of better rates.

[12] Over the 1990-93 period, only about 15-20 percent of bond issues by developing countries carried floating interest rates or convertible terms; that percentage jumped to about 50 percent in 1994 (see World Bank [1994]).

sample of host countries on either net capital flows or secondary market prices of bank debt, found that foreign financial variables typically accounted for more than half (and sometimes as much as 85 percent) of the capital inflow surge and three quarters or more of the variation in secondary market prices. Fernandez-Arias [1994] estimates that the asset substitution effect is about twice as large as the creditworthiness effect, while Chuhan et al [1993] conclude that "external" financial conditions were much more important for flows to Latin American than for those to Asia.

A second suspect is policy performance in the host countries. Because developing countries have less capital than industrial ones, there is a presumption that the marginal productivity of capital should be higher in the former than in the latter. Yet poor macroeconomic and structural policies can make the expected return on capital much less than the potential return. By the same token, improvements in those policies can improve the expected risk/return outlook and attract greater inflows.

During 1991-93, 11 developing countries undertook full or extensive liberalizations of their exchange controls on capital movements; 15 eased restrictions on portfolio inflows; 23 liberalized controls on foreign direct investment; and 5 eased or eliminated controls on portfolio outflows (IMF [1994]). Thus, even though some host countries (e.g., Chile) eventually intensified controls or reserve requirements on inflows to slow their pace, the trend on the whole during the 1990s was one of capital account liberalization. To the extent that restrictions acted as a binding constraint on private inflows to some developing countries in the past, their easing or removal loosened this constraint. For example, while the growth of foreign direct investment into China has multiple causes, the easing of restrictions played an important role, including the 1992 decision to allow foreign investment in all the major inland cities (Bell et al [1993]).[13]

The lure of improved creditworthiness -- induced in turn by better macroeconomic and structural policy fundamentals in the host countries -- is surely another part of the picture. By now, there is an impressive array of country case studies and multi-country econometric evidence to support that proposition that countries with better policy fundamentals find it easier to attract and to hold foreign and domestic saving -- as well as to access that savings on better terms (spreads, maturities, offering prices, etc) -- than do countries with weaker policy fundamentals.

Empirical studies of capital flight from developing countries (Dooley [1988], Mathieson and Rojas-Suarez [1993]) typically find that capital flight is much larger when the home country has a large budget deficit and when its real exchange rate is highly overvalued. Similarly, studies (Edwards [1991b]) that have examined the destination of foreign direct investment flows indicate that countries with better policy fundamentals generally get larger shares of the total. So too with studies of the country pattern of bond flows in the recent inflow episode, where

[13] The big surge in foreign direct investment in China took place in 1993 when it hit almost $26 billion.

researchers (Chuhan et al [1993]) document that these flows are related, inter alia, to the borrowing country's credit ranking. What we know about the time-series and cross-country behavior of secondary market prices of bank debt (Dooley and Stone [1993]) and of interest rate spreads on developing-country bond issues (Cline [1995], Goldstein et al [1994], Edwards [1986]) tell a similar story: differences in policy fundamentals get reflected in the terms that the market sets for different borrowers, as well as for the same borrower over time. In 1993, for example, certain Asian sovereign borrowers (China, Korea, and Thailand) paid a spread on their bonds of less than 100 basis points over comparable U.S. Treasuries, whereas the private sector in Latin America typically paid a spread of 300-500 basis points on its borrowing. In 1989, Mexican sovereign bonds paid a spread of roughly 800 basis points; after intervening improvements in its policies, that spread was reduced to about 200 basis points in 1993.

Argentina, Chile, Colombia, Egypt, Mexico, Thailand, and Venezuela among other host countries, achieved sizeable turnarounds in their fiscal positions (relative to GDP) prior to the surge in capital inflows (Cline [1995], IMF [1994], Schadler et al [1993]). Mexico, for example, moved from a primary fiscal deficit of 8 percent of GDP in 1981 to a primary surplus of 8 percent in 1988-89. Similarly, between 1983 and 1989, Argentina's primary fiscal position strengthened by 10 percentages points of GDP. Thailand improved its overall fiscal position substantially both before the surge period and during it. On the whole, more was achieved on fiscal policy discipline up to 1989 then thereafter (Dooley et al [1994]). In some cases (Chile, Colombia, Egypt, Thailand), fiscal adjustment cum nominal depreciation improved the domestic cost structure (Schadler et al [1993]) -- often correcting substantially overvalued real exchange rates that were a legacy of the early 1980s. Privatization programs (in Argentina, Chile, the Czech Republic, Hungary, Mexico, Indonesia, Malaysia, and the Philippines) both offered foreign investors an opportunity to gain a stake in some of the host country's best firms (the crown jewels) and reduced the prospect of future large calls on the budget (in the case of less efficient firms). Aggregate private-to-private capital flows, which represented about 45 percent of total net private (long-term) capital flows in 1990, took 70 percent of the total by 1993. Trade liberalization increased competitive pressures for greater efficiency in home markets and improved export prospects. Colombia, for example, eliminated most nontariff barriers and reduced its average import tariff from over 40 percent at the end of 1989 to less than 12 percent in March 1992 (Corbo and Hernandez [1993]).

Inflation performance was mixed. Bolivia, Chile, and Mexico implemented major disinflation programs prior to the surge in capital inflows but most Latin American host countries did not record markedly lower inflation rates until the early 1990s (when Argentina, Brazil, Ecuador, and Peru each launched inflation stabilization programs). The inflation performance of high-inflow Asian countries didn't change much (the group average was in the 7-8 percent range throughout most of the 1977-93 period).

As country policies improved so too did their credit ratings. By 1990, at least eight developing countries had established an investment-grade credit rating from one of the two major

international credit-rating agencies (Moody's and Standard and Poors). By 1994, that figure had risen to eleven, and about a dozen more developing countries had a credit rating just below investment grade (World Bank [1994]). Higher credit ratings, in turn, seem to have broadened the investor base for developing-country securities, by drawing in certain more conservative institutional investors (pension funds, life insurance companies, and some mutual funds) whose charters and attitude toward risk had precluded participation before that. Initially, the surge of capital inflows represented mainly the return of flight capital by wealthy individual investors but in 1992-93, U.S. mutual funds and U.S. pension funds apparently began to take part in a serious way (Goldstein et al [1994]).

To say that better policies in host countries typically attracts greater private capital inflows and better borrowing terms than weaker policies is one thing. To assert that better policies are a sine qua non for large inflows is quite another. In fact, there are many recent examples -- from both industrial and developing-country experience -- where large-scale capital flows have occurred in the absence of greatly improved policies. When host-country interest rates are high, market participants may reckon that they can earn an attractive rate of return even in the face of weak fundamentals -- so long as they can quickly undo that position before the inevitable market correction occurs. They may also figure than once the cumulative capital flow becomes large, the probability of government intervention during any sharp correction of asset prices will limit the potential downside risk.

The large capital inflow into the United States in the first half of the 1980s (in the face of a widening fiscal deficit and an increasingly overvalued real exchange rate), and the large inflow into the higher interest rate ERM currencies in the 1989-91 period (in the face of deteriorating competitive positions and still weak fiscal situations in the host countries), are but two industrial-country cases in point. No surprise then, that the recent surge into developing countries has had its share of these flows too.

For example, Brazil, India, and Turkey each attracted sizeable inflows before they had made much progress toward fiscal sustainability (IMF [1994]). A mix of loose fiscal policy and tight monetary policy will typically produce high interest rates. Even though uncovered interest rate parity suggests that a positive interest rate differential should be counterbalanced by an offsetting expected depreciation of the (high interest rate) currency, some market participants may nevertheless gamble that actual exchange rate developments will differ from the market's current expectation.[14]

---

[14] This has often proved to be a profitable gamble. Frankel and Rose [1995] document that for floating exchange rates of industrial countries, the tendency has been for the high-interest currency to appreciate -- exactly counter to the prediction of uncovered interest rate parity; this is often referred to as the "forward discount puzzle."

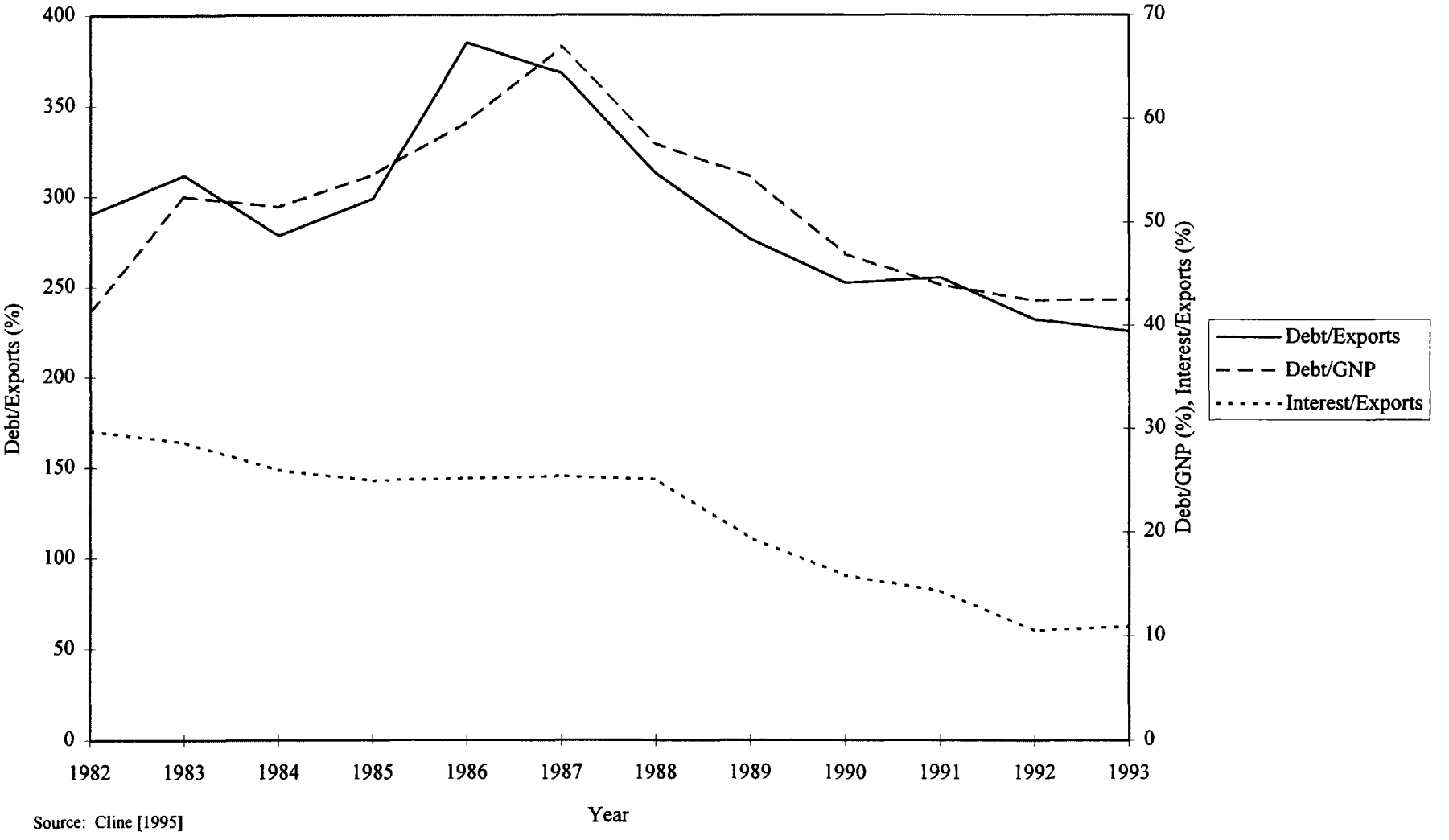
Another inducement to inflows is garden-variety tight credit policies. Recall that a main message of the monetary approach to the balance of payments is that, for an open economy with a fixed exchange rate, the balance of payments is the channel by which an excess demand for money is satisfied; an open capital account can be the main avenue for that monetary inflow. For some host countries, a tightening of credit policies seems to have preceded the capital inflow surge (Schadler et al [1993]). Yet another possibility, relevant to the 1992-93 surge, is that some investors with a relatively high tolerance for risk may simply have invested in some countries who had not yet undertaken significant policy reform under the expectation that they soon would. After all, foreign investors who got in early in the Argentinian, Mexican, and Thai equity markets made very large gains in 1989, as did holders of Argentinian, Chilean, Mexican, and Venezuelan securitized bank debt in 1991. Those who missed that boat may have been eager not to miss the next one, and may have reasoned that the "demonstration effect" of earlier successful reform efforts would spread throughout Latin America.

A third class of causal factors falls under the broad heading of evolution in the operating environment for developing-country capital flows. It has three main elements.

Element number one is debt restructuring, particularly for Latin American host countries. Over the past five years, roughly 85 percent of the end-1989 stock of commercial bank debt of middle-income countries has been restructured in the context of officially-supported "Brady-type" initiatives. If one takes into account the official funds borrowed under the Brady plan to finance debt and debt-service reduction operations, the effective reduction in total net external debt was probably on the order of 15 percent (Cline [1995], Dooley et al [1994]). As noted in Figure 1, debt indicators for the Baker 17 indebted countries continued to improve over the 1989-93 period, as did secondary market prices of bank debt (at least until early 1994). What is less clear is how much of those improvements can be attributed to debt reduction versus the decline in international interest rates. Cline [1995] argues that the Brady plan had beneficial effects larger than those implied by the amount of effective debt reduction since it sent a signal about decreasing government support for the banks versus debtors, since it had the beneficial political effect of replacing a willing-to-pay constraint with a less binding ability-to-pay constraint in debtor countries, and since it boosted confidence more generally. He also notes a consistent tendency for the secondary market price of country's bank debt to rise appreciably right around its signing of a Brady deal. Dooley et al [1994] attribute some positive role for debt reduction but find in their regression results (for secondary market prices of bank debt) that the most powerful explanation for time series behavior is the level of international interest rates. Nevertheless, there is no dispute with the proposition that net capital flows to Latin American host countries would have been smaller in 1990-94 if there hadn't been as much debt restructuring along the way.

The growing maturity of the market for developing-country securities is a second element in the evolving operating environment. The range of instruments has expanded, liquidity has

Figure 1: 17 Heavily Indebted Countries



Source: Cline [1995]

increased,[15] and restrictions imposed by major creditor countries on developing-country issuers have been eased.[16]

As representative of this growing maturity, consider the instruments available to a U.S. investor who wishes to purchase developing-country equities. He/she might be attracted to depository receipts (known as American or General Depository Receipts). These are negotiable certificates issued by a U.S. bank that are fully backed by shares which in turn represent claims on the publicly traded debt or equity securities of a company. From the investor's viewpoint, they carry several advantages: they are denominated and pay interest or dividends in U.S. dollars; settlement occurs in 5-6 days in the United States; tax payments on the underlying asset are often simplified; and the investor avoids global custodian safekeeping charges. There are also different types of depository receipts that differ in their degree of disclosure. The number of depository receipts currently trading is thought to be about 900.

Alternatively, this investor might prefer a country fund -- a mutual fund that invests in a wide spectrum of emerging markets, or in ones from a particular region, or that specializes in a single country. Country funds offer relatively low minimum investment, more liquidity than investing in the local market, and a relatively low cost method of diversifying across emerging markets.[17] The first country fund -- the Mexico Fund -- was launched in 1981. There are now approximately 500 country funds listed in a number of financial centers. The combined portfolio of all emerging-market, closed-end mutual funds was about $33 billion at end-1993.

Yet another choice would be to purchase directly the equity of individual companies. Assume the interest was in Chinese companies. The investor might then consider "B" shares (equity shares denominated in foreign currency and reserved for foreigners) listed on the Shanghai or Shenzhen stock exchanges, or shares of the (7) most internationally well-known Chinese enterprises (e.g., Tsingtao Brewery) listed on the Stock Exchange of Hong Kong

---

[15] According to the Emerging Markets Traders Association, total trading volumes in the secondary market for developing-country instruments exceeded $790 billion in 1992; it is believed that trading volume in 1993 exceeded $1 trillion (Goldstein et al [1994]).

[16] The U.S. Securities and Exchange Commission adopted Rule 144a in 1990. It permits holders of shares in non-U.S. firms purchased in private placement to sell them freely to qualified institutional buyers under certain conditions without being subject to a two-year minimum holding period. Japan lowered in 1993 the minimum credit rating for issuing bonds in the Samurai market (and its minimum rating requirement is expected to be abolished in January 1996) and, effective as of January 1995, the Tokyo Stock Exchange reduced the listing requirements for developing-country companies. In the last few years, several industrial countries have also made it easier for developing countries with earlier debt-servicing difficulties to "graduate" from commercial bank provisioning requirements.

[17] Diwan et al [1992] argue that country funds traded in the capital markets of industrial countries can help promote the efficiency of pricing in the emerging capital markets and can enhance capital mobilization by local firms.

(SEHK). The value of equity (both A and B shares) on the two Chinese exchanges was about $40 billion at end-1993, while Chinese equity placements on the SEHK in that year amounted to over $1 billion.

Or suppose that the investor wants an option -- either as an alternative to purchasing the underlying instrument or as hedge. Mexico's Telmex is now the second most actively traded listed equity option in the United States, and U.S. listed equity options are available for some Argentinian, Brazilian, and Chilean companies as well. Trading volumes (in the over-the-counter market) for developing-country debt derivatives almost quadrupled between 1992 and 1993, and bid-offer spreads on options declined by half (World Bank [1994]).

All of this, along with improving accounting and disclosure standards (in host countries) and greater availability of market research on emerging markets, has made foreign investors less reluctant than they used to be to send capital to developing countries when the opportunities are viewed as favorable.

The third element of the evolving operating environment is the globalization of business. Production, sourcing, and marketing decisions are increasingly made on a worldwide basis. Total sales of multinational firms are now larger (by about a third) than world exports of goods and non-factor services. While the rate and extent of globalization has slowed over the past five years -- after experiencing a spectacular rise in the 1980s (Graham [1995]), flows of foreign direct investment to developing countries have actually accelerated during the 1990s. Whereas developing-countries accounted for 23 percent of global foreign direct investment inflows in the mid-1980s, that share had risen to about 40 percent by 1992-94 (World Bank [1995]).[18] As noted earlier, a handful of the faster-growing developing countries -- China, Mexico, Brazil, the four Asian tigers, and several other ASEAN nations -- have gotten the lion's share of those flows. The advantages that these host countries offer in terms of labor cost, rapidly growing domestic markets, and increasingly hospitable trade and investment regimes, have apparently been decisive in making them the preferred habitat for recent FDI flows.[19]

To sum up, the surge of private capital flows to developing countries in the 1990s has multiple causes. The fall in industrial-country interest rates was probably the most important

---

[18] The World Bank [1995] projects that the developing-country share of FDI inflows could reach 48 percent by the year 2010.

[19] Jun et al [1993] analyze the trends and determinants in Japanese foreign direct investment outflows. They show that the East Asian economies were first used as low-wage production bases, with a shift in the 1980s away from the NIEs toward the ASEAN-4 and most recently, China. Due to increasing labor costs, the NIEs lost their advantage as production bases but still attracted Japanese investors attempting to establish a foothold in these new rapidly expanding consumer markets; see also Khan and Reinhart [1995] on the relocation of labor-intensive industries within Asia.

driving force but policy performance in host countries along with certain changes in the operating environment also figured prominently in the outcome.

One potential contributory factor to surges in developing country capital flows -- be they positive or negative surges -- that is not well understood is contagion. By contagion, I mean a process by which changes in market assessments for some borrowers lead to sequential changes in assessments (in the same direction) for other borrowers, above that implied by the latter's true creditworthiness. Positive contagion is often mentioned as a factor enlarging net private flows to developing countries in 1992-93, just as negative contagion was mentioned as contributing to asset price declines and reversals of capital flows for many developing countries in the weeks surrounding the recent Mexican crisis.

The trick here of course is to figure out how financial developments in the first country affect the true creditworthiness of other countries. For example, if country B is an important trading partner of country A, then a crisis in A which requires it to cut expenditure and imports will reduce B's exports to A and B's true creditworthiness. On the above definition, this would not be contagion even if asset prices and capital flows to B showed sympathetic movements with those in A. But what if losses sustained on loans to A forced (their common) creditors to also sell their holdings in B's assets -- even though A and B had little trade or financial business with each other? Or, as hinted at earlier, suppose policy reform in A led market participants to believe that policy reform in B was more likely in the future -- even if authorities in B were not so inclined.

The notion of contagion likewise raises questions about creditors access to information, particularly in the short term. In the immediacy of a crisis in A, creditors may not know whether B or C's true creditworthiness is affected by the shock. Until they find out, they may "run to quality" by selling the assets of both B and C (especially if transaction costs are low). In fact, a common feature of financial crises is for spreads between high and low-quality assets to widen (Mishkin [1994]). We also know that correlation of equity price movements across countries is greater during times of turbulence than in normal times (Goldstein and Mussa [1994]). This could be quite rational behavior on the part of creditors. Is it "contagion" nevertheless? If contagion reflects a matter of information, why has contagion after the Mexican crisis been greater for equities than for interest rates or exchange rates? What kind of information that is not now published about developing countries' economic situation and prospects would stand the best chance of reducing contagion?

While many of these questions have been taken up in the theoretical literature (on asymmetric information) or in literature on financial crises in industrial countries, there have as yet been few applications to the developing-country capital flow context. It is a worthy subject for future research.

Sustainability

More challenging than explaining why private capital inflows were so large in the first half of this decade is the task of speculating on how large such inflows are likely to be in the second half. Would an annual private net inflow to developing countries of say, $125-150 billion be sustainable? If not, why not? In seeking to answer that question, three sets of considerations deserve emphasis.

First, there is the cyclical, interest rate effect. With interest rates, what comes down can go back up. Since early February 1994, the Federal Reserve has increased interest rates seven times, in an effort to prevent growth in the real economy from getting so far ahead of potential as to reignite inflationary pressures. At the time of writing, U.S. short term rates stand at a little over 6 percent, versus a little over 4 percent a year ago. According to the futures market, the expectation is that U.S. short-term rates will stay about where they are through March of next year. Fernandez-Arias and Montiel [1995] also read the futures markets as suggesting that long-term government bond yields will remain reasonably high over the next five years. This means that the asset substitution and creditworthiness effects discussed earlier have switched sign. The implication is that interest rate effects should reduce the demand for developing-country assets over the medium term relative to what it was over the average of the past three or four years.

While preliminary figures suggest that the absolute amount of net private capital flows to developing countries was perhaps slightly larger in 1994 than in 1993, the acceleration of flows that was evident in 1991-93 has already ended. It seems more than coincidence that last year the (IFC) index of emerging equity market prices fell; that issuance of bonds by developing countries also declined, along with a widening of spreads, a shortening of average maturities, and a decrease in average size of issues; and that secondary market prices of Brady bonds also dipped.

Second, there is the stock adjustment effect in investors' portfolios. Economic theory tells us that the rearranging of asset shares in response to a new pattern of interest rate differentials is a finite process. Cumulative changes in stocks of assets diminish the need for further flows.

Suppose, for example, that prior to the fall in industrial-country interest rates, industrial-country investors held 98 percent of their portfolio in industrial-country assets and 2 percent in emerging market assets. Suppose further that a fall in interest rates on industrial-country assets increases the optimal share of emerging market assets from 2 percent to 4 percent. While this adjustment is going on, net capital flows to emerging markets will be increasing markedly. But once the emerging market share reaches 4 percent, the adjustment process will cease (in the absence of further changes in expected risk/returns). From that point on, the investor will acquire emerging market assets only equal to 4 percent of the growth of his total portfolio. The point here, as emphasized by Fernandez-Arias and Montiel [1995] and Cline [1995], is that even if interest rates in industrial countries had not reversed course in 1994, net private capital flows

to developing countries would have been expected to taper-off.[20] Symmetrically, an increase in industrial-country interest rates may lead initially to sizeable declines in net capital flows to developing countries as investors rearrange portfolio shares -- but that decline too should taper-off as actual shares approach equilibrium ones.

Third and most intriguing, there are longer-term influences at work that should act to put net private capital flows to developing-countries on an upward trend over the medium to long-term.

While international diversification has been increasing over the past decade, the share of foreign assets, and particularly the share of developing-country assets, in industrial-country portfolios is still quite low.[21] U.S. investors hold about 95 percent of their equity holdings in the form of U.S. securities; for Japan, Germany, and the United Kingdom, the corresponding percentages each exceed 85 percent (Tesar and Werner [1992]). The 300 largest pension funds in the world hold have about 7 percent of their portfolios invested outside the country. U.S. mutual funds, for example, are reported to have held at end-1993 about 2 percent of their assets in emerging markets, mostly in equity; the emerging market shares of U.S. pension and life insurance companies are thought to be similar, if not lower (Goldstein et al [1994]).

Because developing-country financial returns have tended to be higher on average than industrial ones and because these returns have in the past been weakly correlated with those in industrial countries, analysts are united (whatever the method of estimating optimal portfolios) in concluding that industrial-country investors are considerably "underweight" in their holdings of developing-country securities. For example, Divecha et al [1992] conclude that industrial-country investors who placed 20 percent of their portfolio in an emerging market index fund would have increased their return by 2 percent, while reducing overall portfolio risk by 1 1/2 percent. Similarly, with a market capitalization (in 1993) of about $1 trillion, the emerging market share of a global value-weighted equity portfolio would be about 12 percent.

Optimism is based on the presumption that over time this "home bias" in industrial-country portfolios will decline (because of greater familiarity with developing-country markets, lower transactions costs, and an easing of externally-imposed prudential requirements on

---

[20] Cline [1995] adopts this stock adjustment assumption to argue that repatriation of capital flight to host developing countries would be on a declining path from 1992 through 1996.

[21] One rough measure of international diversification of portfolios is provided by the ratio of cumulative international capital flows relative to new issues of all domestic assets. Averaging inflows and outflows for 12 OECD countries, this ratio increased from 12 percent in 1975-82 to almost 17 percent in 1983-90; see Goldstein and Mussa [1994]. As for emerging markets, a recent survey of institutional fund managers (Kleinman International Consultants [1993]) reported that these managers allocated 13 percent of their international portfolios to emerging markets assets, up from 10 percent in 1992 and 2.5 percent in 1989.

institutional investors), with large positive effects on net capital flows to developing countries. To be sure, the portfolios of institutional investors are huge. It has been estimated that assets under management by the most important institutional investors (pension funds, mutual funds, insurance companies, etc) in the G-7 countries stood at about $13 trillion in 1993, with U.S. institutional investors accounting for roughly two-thirds of the total (Ito et al [1995]). If the emerging market share in this aggregate $13 trillion institutional portfolio say, doubled (from its present share of 1 percent to 2 percent), this would represent an addition of about $130 billion.

In addition to the portfolio underweighting argument, others have argued for an upward secular trend in net private capital flows based on: fast-growing developing-countries as the most likely source of "supranormal" returns for aggressive portfolio managers bent on beating their performance "bogey";[22] the increasing weight of developing-countries in world output and trade, along with the projection that their share will rise further over the medium term;[23] the boost that the recent round of regional trade liberalizations (NAFTA, APEC, FTAA) will give to developing-country exports and economic growth; the importance (now 40 percent of total flows) and structural (irreversible) nature of foreign direct investment in developing countries; and the lower vulnerability of host countries (after fiscal reform and a decline in debt ratios) to higher international interest rates.

Several authors have gone farther on the sustainability question by conducting some simulation exercises.

Fernandez-Arias and Montiel [1995], for example, construct an index of creditworthiness based on the ratio of the existing stock of foreign liabilities to the present value of capacity to pay (proxied in turn by exports plus imports). They find: that creditworthiness improved in host developing countries between 1990 and 1993; that (based on market interest rate forecasts and growth of trade at its historic rate) creditworthiness declines over the projection period (1995-2000) -- but not so severely as to constrain inflows in the near term; and that conclusions on sustainability are very sensitive to relatively small changes in the assumptions about the future path of interest rates or about the growth of exports plus imports. Based on stock adjustment arguments and market forecasts of increases in international interest rates, they expect net flows to developing countries to decline from 1994 levels over the medium term.

Cline [1995] and Dooley et al [1994] consider whether a return of international interest rates to pre-1990 levels would invoke a second debt crisis. In brief, Cline [1995] answers that question in the negative, pointing to intervening policy reform in host countries and to now

---

[22] See Wadhwani and Shah [1994].

[23] Both the IMF [1995] and the World Bank [1995] project growth rates for developing countries over the next five to ten years that are almost double those for industrial countries.

improved debt and debt-service positions (that makes debtors less vulnerable to an increase in international interest rates). He does not view secondary market prices of debt as a good predictor of market access of developing countries. As noted earlier, Dooley et al [1994] are more pessimistic. They argue that the change in the primary fiscal surplus for the "average" middle-income debtor country has been negative since 1989, that secondary market prices are a better barometer of debtor-country financial strength than is the volume of private net capital flows, and that almost all of the improvement in secondary market debt prices since 1989 can be accounted for by the decline in international interest rates. As such, they conclude that a return to pre-1990 international interest rates would depress secondary market debt prices to a level inconsistent with continued, private net capital inflows.

A related important question is what would happen to developing-country growth performance if net private capital inflows did in fact decline sharply from their 1990-94 average. A recent IMF [1994] simulation exercise addresses that question. It assumes that net capital inflows decline by $60 billion (per year) over the 1995-99 period and that the reduced inflow is apportioned across countries on the basis of their shares in total inflows during the 1990-93 period. The reduced capital inflow is presumed to reflect policy slippages in the developing countries, in the form of higher fiscal deficits to the tune of 2 percent of GDP. In this pessimistic scenario, the external environment also worsens, as summarized by lower growth, higher inflation, and higher interest rates in industrial countries. The bottom line is that real output in the developing countries is almost 3 percent below baseline in the third year of the simulations, most of which would not be recouped by 1999. The largest output decline occurs in Asia, reflecting its large share in the assumed reduction of net capital inflows.

To sum up, there are two main question marks about sustainability of private capital flows over the medium term.

One is what will happen to international interest rates. In the near term, the main uncertainty is how long lived will be the recent softening of activity in the largest industrial economies and what will be the monetary policy response to it. In the space of just the last three months, market participants have lowered their forecast of year-end U.S. short-term interest rates by about 125 basis points and a small cut in U.S. interest rates can no longer be ruled out. The international interest rate outlook over say, an eighteen month horizon remains particularly uncertain at present.[24] Looking farther down the road (5-15 years), the biggest unknown is whether industrial-country efforts to reduce public dissaving will be successful.[25] If they are,

[24] The IMF's May 1995 World Economic Outlook projected a small increase in short-term interest rates as between 1995 and 1996 in each of the three largest industrial countries (LIBOR was likewise projected to rise from 6.8 percent in 1995 to 7 percent in 1996), but that projection was made prior to the most recent economic developments in those countries.

[25] Note that budget deficits of the industrial countries averaged over $600 billion per year in 1991-93.

analyses by the IMF [1995] and the World Bank [1995] suggest that global investment demands could be accommodated at existing or somewhat lower (100-200 basis points lower) global real interest rates; alternatively, if those fiscal consolidation efforts are not successful, then higher (100-150 basis points higher) global real interest rates emerge as the most likely scenario.

The second question mark is how fast the large "home bias" in industrial-country portfolios will be reduced. At present, the share of emerging markets in portfolios of institutional investors is so much below the level suggested by optimal portfolio considerations that a doubling or even quadrupling of that share over the next decade cannot be dismissed out of hand -- especially if host countries maintain good policy performance and relatively high growth rates. But that assumes that home bias primarily reflects unfamiliarity with these markets and institutions. If instead home bias represents a fear by these investors that non-residents will receive less favorable treatment than residents at times of acute economic difficulties (say, because they obtain crucial information later or get taxed more heavily in case of full or partial default), then they will avoid cumulative large, net exposure to emerging markets risk.[26] Only time will tell which of those explanations of home bias is closest to the mark.

For now, the most defensible forecast is that private net capital inflows to developing countries will decline for the next year to two from their 1993-94 average. Over the medium-term and extending out say, ten years, net private flows should be on an healthy upward trend, albeit one probably marked by considerable short-term volatility.

[26] For arguments as to why actual international capital mobility is much lower than potential capital mobility, see Dooley et al [1987].

IV. Policy Concerns and Options

So much for background. The central issue is how should economic policy in host countries be managed in the face of large, net capital inflow. After reviewing the traditional benefits of capital market integration and capital inflows, I turn to exchange rate policy, sterilization policy, fiscal policy, regulatory and supervisory policy, and efforts to stem capital inflows themselves via controls or tax measures.

The benefits of integration and capital inflows

Before discussing how to cope with too much of a good thing, one ought to be clear about what the "good thing" is. International capital markets, just like their domestic counterparts, serve many functions. They channel resources from units (in this case, countries) that are savers to units that are dissavers, thus loosening the constraints imposed by self finance. This permits host countries to smooth consumption or to undertake investment to a greater extent than if foreign savings were not available, thereby potentially increasing welfare and economic growth. By increasing competition, these capital markets raise the rate of return to domestic savers and lower the cost of capital to domestic firms. They provide liquidity. They transfer beneficial technology (through foreign direct investment). They allocate and diversify risk. Finally, they can discipline errant government policies by subjecting the country initially to a rising default premium and ultimately to credit rationing, or to a forced adjustment in exchange rates. All this taken together is the "good thing" mentioned in the title of this paper and the reason why there has been a clear trend over the past three decades in both industrial and developing countries alike toward deregulation of international capital flows.

But none of this contradicts the notion that host countries can borrow too much from abroad, or that they can use foreign saving unproductively, or that large capital inflows (even when they are non-debt creating) can threaten macroeconomic stability and efficient resource allocation and confront authorities with difficult policy choices. Put in other words, a good final outcome is not guaranteed.

In what follows, the pros and cons of alternative policy responses to large capital inflows are identified and discussed.

Exchange rate policy

How countries conduct exchange rate policy in the face of large capital inflows depends in large part on their choice of exchange rate regime -- a choice that is invariably based on broader and longer-term considerations than the capital inflow issue. Managed floating, exchange rate bands (usually with a crawling peg), and fixed exchange rates (including currency boards) each have their representatives in the sample of host countries.

Whatever the exchange rate regime, the first question the host country needs to ask is whether the equilibrium real exchange rate has changed in the way that would make real appreciation desirable. For example, if a country's external debt and debt-service position has improved markedly so that it no longer needs to generate such a large current account surplus to meet debt payments, then a higher real exchange rate would be consistent with fundamentals. Similarly, if the host country has undergone rapid productivity growth and improved its underlying competitive position, a real appreciation would be warranted. So too if the host country's profitability has improved and it can be reasonably sure that the large capital inflow is likely to be sustainable. On the other side, a large negative change in the terms of trade that looks permanent would merit a lower real equilibrium exchange rate. None of these factors is academic for our group of host countries. As noted earlier, many have experienced a reduction in their debt-servicing burdens, some have been the beneficiaries of rapid productivity growth in the 1980s, and some have implemented structural reforms that have improved the long-term outlook for profitability. Also, some host countries suffered a deterioration in their terms of trade during the 1990-93 period.

Let's suppose however that the country does not believe the equilibrium real exchange rate has changed since the pre-surge period. In that case, it will be concerned about a large real appreciation; how concerned it is depends on its circumstances. For example, highly open economies may see the export sector as crucial to economic growth and technological advancement. Highly indebted ones will be particularly needing of export earnings to service external debt. And countries who have just recently implemented a trade reform will worry that a significant fall in profitability of the traded goods sector -- coming soon after a reduction in quotas and tariff rates -- could jeopardize the credibility of that reform. What then are the options?

If the host country follows a regime of (lightly) managed floating and allows the nominal exchange rate to take the brunt of the adjustment, it will protect its monetary policy independence (including its flexibility to act as lender of last resort when need be). It will suffer a real appreciation but it will not experience an increase in inflation. In fact, the effect of a nominal depreciation is likely to be contractionary. If the economy is already overheated, such a deflationary impulse may be helpful. By minimizing the impact of capital inflows on the external component of high-powered money, it can worry less that capital inflows will exacerbate problems in the banking system by increasing intermediated flows. And nominal appreciation may discourage further inflows because market participants will be unsure about the direction of future exchange rate changes.

On the negative side of the ledger, it is well established that floating rate regimes exhibit higher short-run variability of real exchange rates than do more fixed rate regimes (Mussa [1990]); this, in turn, could adversely affect export performance, particularly if exporters find hedging instruments too expensive or unfamiliar. One also cannot rule out the possibility of

bandwagon effects in the exchange market, which might make the nominal appreciation larger than the authorities expected it to be. And start up and bankruptcy costs could mean that declines in export industries will not be fully reversible when foreign capital and the exchange rate change direction.

Malaysia provides an example of a country that has maintained a policy of managed floating before and during the surge in capital inflows. The Central Bank intervenes only to avoid excessive variability of the ringgit against a basket of foreign currencies. By implementing strong fiscal adjustment and tight monetary policy, Malaysia was able to keep both the rise in inflation and the appreciation of the real exchange rate within relatively narrow limits (Corbo and Hernandez [1993]).

This is not to say that managed floating provides complete independence for monetary policy in the context of large capital inflows. An interesting case in point is the experience of New Zealand.[27] According the Reserve Bank Act of 1989, the Reserve Bank of New Zealand in carrying out monetary policy is guided by a single objective, namely, the achievement and maintenance of stability in the general level of prices. In operational terms, this has been translated into an inflation target of zero to 2 percent. On some occasions, private capital inflows have produced a large nominal appreciation of the New Zealand dollar. Given the weight of imports in expenditure, a large (exchange rate induced) fall in import prices could push inflation below the zero end of the target range. Since the law regards a breach of the low end of the target symmetrically to a breach of the high end, this puts the monetary authorities in a dilemma: either intervene to blunt the nominal appreciation (and accept the implications of that sterilized intervention) or alter (ease) the stance of monetary policy (away from domestic requirements) to stay within the inflation target. The point is that while floating rates give more control over domestic monetary policy than do more fixed rate regimes, the insulation of monetary policy from capital inflows is seldom complete (whatever the de jure arrangements for central bank independence).

A second option is to use an intermediate regime, such as a system of exchange rate bands around either a fixed or crawling central parity. When the surge comes, the authorities might then widen the band; if pressure keeps up, they could later change (revalue) the central rate or adjust the rate of crawl.

Like all intermediate regimes, this offers the best -- and worst-- of both worlds. On one side, the authorities don't need to turn over the determination of the rate to market forces, and if flows reverse themselves, they can still get some anti-inflation discipline by changing the nominal rate by less than the differential rate of inflation between the host country and the countries whose currencies make up the peg or basket. Also, the position of the exchange rate in

[27] See Branch [1994].

the band may give authorities and the public some indication of the equilibrium rate; a reversal of flows might be accommodated without changing the central rate; and the two-nature of movement within the band might discourage speculative pressures (Schadler et al [1993]). More pessimistically, the width of the band and the rate of crawl may be insufficient either to accommodate market pressures or to preserve monetary policy control. Also, if capital flows reverse, political sensitivities may prevent the central rate or rate of crawl from being adjusted in a timely enough fashion to prevent a large misalignment and the ensuing exchange market crisis.

Both Chile and Mexico have employed such intermediate exchange rate regimes in recent years (Corbo and Hernandez [1993]). As part of its efforts to mitigate the macroeconomic effects of capital inflows, the Chilean authorities appreciated the central value of the exchange rate band in June 1991. Then in January 1992, they revalued the peso by 5 percent and increased the width of the exchange rate band from plus/minus 5 percent to plus/minus 10 percent. This was followed in July 1992 by a switch in the peg from the U.S. dollar to a basket of currencies (presumably to increase the uncertainty about the evolution of the exchange rate). All the while, the authorities were sterilizing heavily, and later in the inflow period, placing penalties on capital inflows as well. Mexico too used a widening of the exchange rate band as part of its policy arsenal for dealing with capital inflows. That exchange rate regime, however, later proved insufficiently flexible to prevent an overvaluation of the peso and an exchange rate crisis (in December 1994).

The third option is to maintain a fixed nominal exchange rate. Encompassed under this regime are a set of possible policy responses to capital inflows. Intervention can be unsterilized or sterilized. Monetary policy can be implemented in a discretionary way (within the constraint of defending the fixed rate) or it can be rule-based (as in a currency board). Sterilization can be used alone to limit the rise in the real exchange rate or it can be supplemented (where feasible) by restrictive fiscal policy. Since many of these flanking policies will be discussed later in this section, suffice here to make a few points.

The predominant motivation for keeping the rate fixed in the face of a large capital inflow is that, for some countries, the nominal exchange rate may be the best anchor for monetary policy. In the wake of earlier unsuccessful attempts to rein-in inflation by other methods, some countries may regard it as short sighted to abandon an exchange rate orientation of stabilization policy -- especially when the capital inflow may turn out to be of short duration. In a similar vein, the rule-based discipline of a currency board may be viewed as the only way to insulate monetary policy over the longer-term from political pressures and external shocks. Argentina and Hong Kong are but two examples of countries that have concluded that "tying their hands" on monetary policy via a currency board or a fixed exchange rate has longer-term stability advantages that outweigh any costs associated with a loss of monetary policy independence.

By sterilizing the effect of the inflows on the monetary aggregates and/or by tightening fiscal policy, adherents of fixed nominal rates may also reckon that it will be feasible to keep the

lid on inflationary pressures and to limit to tolerable amounts the appreciation of the real exchange rate. And even if the real exchange rate and the current account deficit rise significantly, the country may have enough of a reserve cushion to ride it out.

The pitfalls of such an exchange rate policy are well known. The capital inflow may be too large and too expensive to sterilize effectively. Fiscal policy may drift off course and be too inflexible to turn around at short notice. A rise in inflation and in the real exchange rate, cum a widening of the current account deficit, may shake the confidence of foreign investors. Private capital outflows, falling reserves, the adverse effect of a high interest rate defense on the financial sector, and the reluctance to let go of the nominal exchange rate (for political reasons), may then ultimately set the stage for a currency crisis. In the case of a currency board, should an external shock (like a rise in international interest rates) depress creditworthiness and lead to a fall in reserves, the monetary rule may not give adequate leeway to the central bank to act as lender of last resort to troubled financial institutions.

If the country maintains a fixed rate during the capital inflow and is keen to limit the rise in the real exchange rate, experience suggests that accompanying fiscal tightening is a key ally. Beyond that, the composition of absorption makes a difference. If investment falls more heavily on imported goods than does either private or public consumption, then investment-led expansions will be kinder to the real exchange rate than other absorption patterns. As hinted at earlier, this (along with stronger sterilization capabilities) may explain why real exchange rate appreciation has been less prevalent in Asian host countries than in Latin American ones.

Sterilization policy

Authorities in host countries face three basic decisions about use of sterilization policy: whether to sterilize, how to sterilize, and how much and how long to sterilize. Each merits some discussion.

One way to approach the first question is to consider the circumstances under which it would be appropriate not to sterilize.

One such circumstance is when the demand for money in the host country has been increased by a permanent reduction in the rate of inflation which increases confidence in the store-of-value function of domestic money. In this case, the monetary effects of the capital inflow will be willingly held. Effects on inflation, absorption, and the current account occur only when there are excess money balances. A similar line of argument would apply to situations in which there is a genuine credit shortage in the host country.

A second circumstance in which sterilization would not be appropriate is when absorption prior to the inflow has been kept undesirably low. A classic case in point is the Romanian experience of the late 1980s when the Ceausescu regime manipulated the saving-investment

balance to ensure current account surpluses to repay the entire external debt. As a result, there was a sharp decline in living standards, in the quality of investment, and in economic growth (Calvo, Sahay, and Vegh [1994]). Here, an increase in consumption could justifiably be regarded as a move toward an equilibrium level, rather than a temporary binge. So long as the increase in consumption or investment is sustainable, sterilization can be dispensed with.

Yet a third rationale for not sterilizing is the availability of other policy instruments that could deal with the capital inflow at lower cost (more on the cost of sterilization below). As noted earlier, for countries that don't need to use the exchange rate as a nominal anchor, an appreciation of the nominal rate offers a way to minimize the effect of the inflow on the external component of the monetary base, that is, there will be much less to sterilize in the first place. In general, the greater the degree of exchange rate flexibility, the less the need for sterilization.

In a similar vein, further liberalization of capital outflows and of imports is sometimes put forward as an alternative to sterilization. The basic idea here is to open the exit doors wider after the surge so that the size of the net capital inflow (or the change in international reserves) is much smaller. Although a number of host countries (e.g., Chile, Colombia, Egypt, Thailand) have taken such measures as part of their response to capital inflows, one should be skeptical about such fine tuning of the liberalization process. For one thing, it may not reduce the net inflow at all. Foreign investors, particularly institutional investors, place a high value on being able to "get out" of a market when the risk/return outlook deteriorates. Liberalizing capital outflows may therefore make the host country a more attractive place to invest and could induce greater inflows. Import liberalization, by improving resource allocation, could well operate in the same direction.

If none of the above circumstances apply, then the host country authority will see sterilization as having an appeal. After all, if the nominal exchange has been used successfully to control inflation for some time, allowing the capital inflow to translate itself into a sharp rise in inflation would undermine the authorities credibility. Moreover, if the authorities have good reason to believe that the inflow will fuel an unsustainable consumption boom or a surge of bank lending for highly speculative activities (e.g., equity market speculation or excessive lending for real estate), sterilization offers a way to blunt those effects. More generally, sterilization is a way for the authorities to try to prevent the capital inflow from driving their original economic policy strategy off-track.

The question of how to sterilize comes up because there is more than one way to do so. The most popular method is to exchange domestic government bonds for foreign exchange, thereby offsetting the effects of the initial exchange market intervention (the exchange of domestic money for foreign exchange) on the monetary base, and preventing any induced effects on aggregate demand. There are two relevant constraints. One is the fiscal cost. Because the interest rate on domestic bonds in host developing countries is typically much higher than the yield on holdings of international reserves (e.g., U.S. Treasury bills), an exchange of domestic

bonds for foreign exchange is a loss-making transaction (more on this below). The second constraint is the size of the central bank's balance sheet and the depth of the government bond market. If the central bank doesn't have many government bonds in its possession, it won't be able to withdraw much liquidity from the system by selling them; it would have to issue new bonds to do so. Similarly, if the market is very thin, it will be difficult and expensive to find purchasers for these bonds. Corbo and Hernandez [1993] cite the lack of a well-developed market for government securities as constraining the capacity of the Korean authorities to sterilize the monetary effects of the capital inflow.

An alternative way to go is to increase reserve requirements on banks. This constrains the ability of banks to lend, thereby reducing the size of the money multiplier and the effect of the inflow on the money supply (for a given increase in the monetary base). This is the intent. It also avoids the fiscal costs associated with open market operations. If the reserve requirement is set very high (say, 100 percent beyond a benchmark), it will lower interest rates on deposits and discourage further inflows.

Since required reserves are rarely remunerated at market rates, this is basically a tax on the banks. Domestic banks will therefore lose profitability and business relative to foreign banks and to domestic non-banks.

Whether this tax on the banks is a good thing or not depends on several considerations. If the non-bank sector is significant and can provide good substitutes for bank deposits, then the tax may simply shift the intermediation of inflows to non-banks, with little effect on total lending or aggregate demand. In Korea, for example, the imposition of high nonremunerated reserve requirements on commercial banks, cum tighter regulations on the market for bank credit, coincided with a significant shift in deposits from banks to nonbanks. Similarly, very high reserve requirements on banks in the Philippines may be partly responsible for the relatively low level of bank intermediation in the financial system. The more bank denominated is the local financial system, the less likely is this to happen in the relevant time frame.

There is also the matter of the health of the banking system. If the intermediation of these inflows was to support good credit risks, then taking that business away from domestic banks could be costly to the industry's long-term future. On the other hand, if the demand for credit originates mainly in high-risk sectors, then allowing foreign banks to grab a greater share of these risks reduces the potential call on the host authorities to provide emergency assistance should such lending subsequently go sour (Hausman [1993]).

Other methods of sterilizing inflows include shifting government deposits from commercial banks to the central bank, curtailing access to rediscount facilities, and increasing interest rates on central bank assets and liabilities. The scope for using these less orthodox sterilization measures differs widely across countries. For example, Reisen [1993a] documents how several East Asian economies (Indonesia, Malaysia, Singapore, and Taiwan) have used

large social security funds, state banks, and public enterprises to immobilize and to short-circuit the monetary effects of capital inflows. That option is not likely to count for much in host countries where such public saving institutions are either much smaller on non-existent.

As noted earlier, almost all host countries sterilize at the beginning of a surge in inflows -- if only to get breathing room to figure out what to do if the inflow proves more than a short-run, reversible phenomenon (if the inflow is short-term and moderate in size, the consequences are not likely to be significant, whether the authorities sterilize or not). The real question is how much and how long to sterilize?

A potentially serious constraint on large-scale sterilization via open market operations is the fiscal cost and higher level of domestic debt. When the host country faces an interest rate differential between home and foreign assets of say, 8-10 percent or more, and needs to mop up liquidity equal to 3-4 percent of GDP or more, sterilizing can become an expensive proposition. According to Calvo et al [1995] and Kiguel and Leiderman [1994], estimates of these costs range from .25 to 1.4 percent of GDP per year for Latin American host countries. Also, if the country's debt-to-GDP ratio was already high, further increases in it could raise doubts about the credibility of anti-inflationary monetary policy and of a fixed exchange rate (since the incentives to monetize the debt or devalue would then be greater), thereby working against the objectives pursued by sterilization in the first place.

The second key constraint on large-scale sterilization is the interest rate effect and its implications for further capital inflows. Here, a number of points are relevant.

Suppose that the net capital inflow is driven by lower interest rates abroad. If the host-country central bank engages in sterilized intervention, capital inflows will be larger, and the interest rate spread will be higher, than if the host country did not sterilize. In this sense, it is fair to say that sterilization has prolonged the conditions that gave rise to the capital inflow. But it is not legitimate to conclude that after sterilization the domestic interest rate will be higher than before sterilization, or that capital inflow will continue at the same rate as before (Frankel [1993]). As emphasized earlier, once investors obtain the share of domestic assets they want in their portfolios, the capital inflow will be reduced (and will be governed by the growth of the total portfolio).

The interest rate effect of sterilization depends in part on the assets that investors want versus those supplied by the central bank. If, for example, foreign investors want equities or foreign direct investment but the central bank carries its sterilization operations in domestic bonds, then the interest rate will be higher than if foreign investors wanted bonds in the first place (Kenen [1993]). The intuition here is that when assets are quite imperfect substitutes for one another, it takes a larger interest rate change to accommodate investor preferences than when assets are close substitutes.

The degree of asset substitutability also counts in determining how large a gap will remain between domestic and foreign interest rates after a capital inflow, even if the authorities don't sterilize at all. One might think that with all the capital that has flowed into developing countries over the past five years, domestic interest rates would by now be close to foreign interest rates. But that is not the case. The question is why? Frankel [1994] has recently looked at the determinants of the differential between foreign (industrial-country) and domestic interest rates. He identifies three components of the differential: the expected depreciation of the domestic currency, default or country risk, and the exchange risk premium (the compensation for holding currencies that are perceived to be riskier than the foreign currency). He finds that most of the differential typically reflects expected depreciation of the domestic currency. For example, of the 7.7 percent differential between one year Mexican CETES and U.S. Treasury bills in September 1994, 3.8 percent represented expected depreciation of the peso; the country premium and the exchange risk premium accounted for 2.1 and 1.8 percent, respectively. Frankel [1994] also finds that most of the time-series variation in the differential reflects variation in expected currency movements. In any case, one should not regard domestic assets as close substitutes for foreign ones.

Thus far, in considering the interest rate effects of sterilization, it has been assumed that the driving force was a reduction in foreign interest rates. As illustrated in Section III however, other factors can also drive net capital inflows. Are the interest rate effects of sterilization the same for these other kinds of shocks? The answer is yes and no. Yes, the domestic interest rate will invariably be higher with sterilization than without it (no matter what the shock). No, the interest rate will not always be lower after the shock cum sterilization than it was before it. Frankel [1993] shows, for example, that if the capital inflow is driven either by an export boom or by a rise in money demand (in the host country), then the domestic interest rate will be higher after the shock than before it. Edwards [1991a] argues that just such a scenario (that is, an export boom) provides the most convincing explanation for why interest rates in Colombia remained high after a large capital inflow cum large-scale sterilization.

But what if, despite these considerations, the host country wants to make heavy use of sterilized intervention. If it maintains a fixed exchange rate and a completely open capital account, will sterilized intervention permit it to control the money supply and run an independent monetary policy? Economic theory says no. Industrial-country experience also seems to answer in the negative. Germany, for example, eventually had to abandon fixed rates in the early 1970s in order to run an independent monetary policy; heavy intervention was not able to turn the tide. The same outcome prevailed in 1992-93 when, despite huge amounts of sterilized intervention, it proved necessary to resort to realignments and much wider exchange rate bands in the ERM in order to accommodate a greater degree of monetary policy independence among members.

But maybe host developing countries are in a different situation. Reisen [1993a, 1993b], in particular, takes the view that a group of East Asian developing countries has been able to employ sterilized intervention effectively enough to achieve simultaneously fixed exchange rates,

open capital markets, and independent monetary policy. He attributes this to the "art of central banking" in the region, including the pragmatic use of public institutions (e.g., social security funds, state enterprises) as monetary instruments. Others, while not denying the relatively high autonomy of monetary policy in the region, take a more conventional explanation of what lies behind it. Specifically, they argue either that nominal exchange rates have not been completely fixed (Claassen [1993]), or that capital mobility is imperfect (Fry [1993]), or that domestic financial markets are not yet liberalized enough for interest rate changes to have much effect on the real economy (Frankel [1993]). All of this makes it easier to implement sterilization in this region than elsewhere (although the same argument would imply that this difference would fade over time, as capital market integration and domestic financial liberalization increased).[28]

Fiscal policy

The good news about using fiscal policy in the face of large inflows is that the prescription is relatively straightforward. The bad news is that, at least so far, few countries have indicated that they are ready to take the medicine.

As indicated earlier, a tightening of fiscal policy during the surge can help to restrain aggregate demand and inflation, can limit the appreciation of the real exchange rate (particularly when much of government expenditure falls on nontradables), can reduce the deterioration of the current account (when government expenditure falls on tradables), can discourage further inflows (by lowering interest rates). and can raise national saving (thereby making room for higher levels of investment and exports). If the host country has a medium-term problem of excessive indebtedness, or if there is evidence that private investment carries a higher rate of return than public investment, the argument would only be strengthened.

The factual record tells us, however, that most host countries (Indonesia and Thailand are two of the exceptions) have not implemented a significant tightening of fiscal policy during the surge period (Calvo et al [1995], Schadler et al [1993], Dooley et al [1994]). Apparently, host countries have either decided that it is not advisable to alter their longer-term fiscal plans to deal with a capital inflow, or more likely, have not been able to garner the requisite political support for such fiscal contraction.

---

[28] Inferences about the effectiveness of sterilization in other host country regions has sometimes been based on empirical estimates of so-called "offset coefficients." This is a method that derives from the monetary approach to the balance of payments under fixed exchange rates. It leads to an estimating equation where one can determine how much of a change in net domestic assets leaks out into the balance of payments. If all of it does, the offset coefficient is unity, and the implication is that sterilized intervention would be ineffective. Schadler et al [1993] estimate such an offset equation for five host developing countries, and find some scope for monetary policy independence in four of them.

As noted earlier, many host countries underwent significant fiscal consolidation prior to the inflow period. Given the size of net capital inflows, a further tightening equal to several percentage points of GDP may have been too much to ask.
Pressures to spend, whether for infrastructure, education, or other purposes, may intensify in a setting of increased growth and high availability of external finance (Bercuson and Koenig [1993]). Or it could be that fiscal policy is viewed as being too inflexible to be of assistance in a situation where the duration of the capital inflow is itself uncertain. Future research will need to sort it out.

Regulatory and supervisory policy[29]

Regulatory and supervisory policy encompasses the whole set of rules and practices associated with official oversight over the operation of financial institutions and the functioning of financial markets. The relevance of these policies to the discussion at hand is that large and/or volatile capital flows can exacerbate existing weaknesses in the financial systems of host countries. These concerns affect both the banking sector and equity markets.

Banks are at the center of the financial system in host developing countries, with bank assets typically accounting for at least half of total financial assets. It is no surprise then that banks play a key role in the intermediation of capital inflows, as well as a direct importer of funds. This role is most obvious when the capital inflow enters as in increase in foreign liabilities of domestic banks and is used to fund an increase in bank lending. But even when foreign capital flows in as foreign direct investment, bond issuance, or equity portfolio investment, the deposits and reserves of the banking system will temporarily increase. This because investment in a nonbank financial asset still requires that the foreign investor use a local deposit to pay for it (Folkerts-Landau et al [1995]). Unless the increase in local bank deposits/reserves are either offset via sterilization operations or used to import goods and/or assets, there will be an increase in bank lending.

In the event, net capital inflows have typically been accompanied by increases in domestic credit in host countries (Fernandez-Arias and Montiel [1995]). As one might expect, the expansion in commercial bank assets -- and the increase in domestic lending more specifically-- have been largest in those host countries with the largest net inflows.[30] For instance, in Thailand, the ratio of bank assets to GDP rose from 73 percent in 1988 to 102 percent in 1993, while the private loan to GDP ratio increased from 51 to 79 percent over (almost) the same

[29] Much of this section draws heavily on Folkerts-Landau et al [1995]; the reader is referred there for more extensive discussion of these issues.

[30] See Folkerts-Landau et al [1995].

period.[31] In some cases, funding for these loans was facilitated by the banks' own foreign borrowing. For example, the ratio of commercial bank gross foreign liabilities to GDP jumped sharply during the surge period in Indonesia, Malaysia, and Thailand.

Such increases in the size of commercial bank balance sheets and in bank lending would be no cause for concern if banks' own risk management systems were well developed, and if the regulatory and supervisory framework were uniformly effective. Enough to say that this has not always been the case. Weaknesses stem from a variety of sources.[32]

In some host countries, there is a long tradition of allocating a fixed proportion of bank loans to particular sectors (heavy industry, agriculture, small-scale enterprises) on non-commercial terms to further government economic policy objectives. In others, lending has sometime becomes highly concentrated in sectors (e.g., construction and real estate) that are known to be risky and vulnerable to interest rate and cyclical fluctuations. Large exposure guidelines are often thwarted by extensive lending to bank-related borrowers or by accounting practices that permit borrowers to use a fictitious name when doing business with a bank. And independent internal oversight of lending decisions by a credit review committee has been far from a universal practice.

Nor have banks in host developing countries been immune from structural changes, moral hazard problems, and maturity mismatches that have contributed to banking problems in some industrial countries. Liberalization of capital markets and the trend toward securitization have made it possible for blue chip firms to tap international markets directly by issuing bonds and stocks. This departure of the most creditworthy clients has increased the average riskiness of bank credit. The presence of (non risk-weighted) deposit insurance, of central bank rediscounting of credits, and of implicit "too-big-to-fail" emergency liquidity assistance has reduced the incentive of private market participants, as well as of the banks themselves, to monitor risk. One of the reasons banks are "special" is that they provide short-term liquid liabilities and longer-term illiquid assets (typically business loans). But that liquidity and maturity mismatch is their Achilles heel when depositors/creditors lose confidence and "run."

The supervisory and regulatory framework for banks has likewise sometimes been part of the problem. While most host countries have introduced versions of the Basle risk-weighted capital standards, poor accounting standards can make it difficult to ascertain the quality of bank assets; for example, bad loans and capital losses may be obscured by recapitalizing interest payments. In some places, companies face no penalties if the information provided to auditors is subsequently shown to be incorrect. Required loan-loss provisions can be set at very low levels.

---

[31] See Folkerts-Landau et al [1995].

[32] See Folkerts-Landau et al [1995], Wang and Shilling [1995], and Rojas-Suarez and Weisbrod [1994].

And banking supervisors may not have the legal authority to seize assets, or issue cease and desist orders, or close insolvent banks.

Large and volatile capital flows can magnify the consequences of these weaknesses in host-country banking systems -- much in the same way that the oil price increases of the 1970s magnified the consequences of existing structural rigidities in oil-importing countries. Faulty credit assessment becomes a more serious problem when the volume of bank credit soars. Maturity mismatches between bank assets and bank liabilities become a more pressing concern when capital outflows and deposit withdrawals force the liquidation of bank loans. And high concentration of bank lending to interest-rate-sensitive sectors bites with greater force when large fluctuations in foreign interest rates drive flows in and out of the banking system.

On the equity market side, weaknesses and vulnerabilities primarily reflect the facts that the infrastructure servicing these markets is of relatively recent origin and that the markets themselves are still too small to absorb large portfolio flows without strains.[33] Again, when capital inflows are large, these weaknesses and vulnerabilities take on added significance.

Accounting and disclosure requirements are being tightened in many emerging equity markets but are nevertheless still less stringent than those in the world's premier markets. Market participants cannot assess and price risk appropriately unless they have adequate information. The lower is the quality of public disclosure, the greater the risk of volatility and contagion from rumors. Excessive leverage in derivative markets can fuel speculation and volatility. Some emerging equity markets have serious regulation on margin trading and short selling, while others do not. Clearance and settlement systems are yet another important aspect of the infrastructure. Daily marking-to-market of positions, clear position limits, establishment of capital requirements for exchange and clearinghouse members, and short settlement periods, all help to inhibit systemic risk. In some emerging equity markets, clearance and settlement systems already contain these features; in others, they do not.

When the size of the portfolio capital flow is large relative to the size of the host country equity market, the stage is set for large fluctuations in that flow to generate high price volatility and large shifts in market liquidity. In this connection, there were individual months in 1993 when net capital inflows from the United States alone represented 10 and 30 percent of the average monthly trading volumes on the Hong Kong stock market and the Mexican Bolsa, respectively (Folkerts-Landau et al [1995]). What then can the host country do to minimize its vulnerability? Three broad options stand out.

The first one would be to strengthen the regulatory and supervisory framework before the surge in capital inflows takes place, or to say much the same thing, to match the pace of capital

[33] See Wang and Shilling [1995] and Folkerts-Landau et al [1995].

market liberalization to the capacity of the regulatory and supervisory structure. This would prevent the former from overwhelming the latter and should reduce the prospect of poor allocation of foreign resources and of large public-sector liabilities to bail-out failed financial institutions (Fischer and Reisen [1994]). Such improvements would also enhance the host country's long-term attractiveness to foreign investors since the latter prefer to operate where there are adequate safeguards against systemic risk and where markets have high transparency and integrity. The main rub to this first-best solution is that the political support for significant regulatory reform may be difficult to muster. In addition, there is the practical problem of forecasting the timing and scale of private capital inflows.

The second option is to try to improve regulation and supervision "on the fly" (that is, during the surge period itself), while simultaneously sterilizing much of the inflow. This is what many host countries have in fact tried to do. While one can't isolate the independent effect of supervisory and regulatory policy changes, the record of financial difficulties is a mixed one. In a number of high-inflow host countries, the ratio of non-performing loans to total loans hit 6 percent or more sometime during the 1990s;[34] in some of those, the ratio improved from the beginning of the surge period, while in others it deteriorated. Financial difficulties were severe enough in Venezuela to require a large-scale recapitalization of the banking system.[35]

Yet a third option is to impose temporary controls and/or taxes on capital inflows so as to reduce the proximate source of increased pressure on the financial system. Since this policy option is relevant for much of what has been discussed earlier in this paper, it merits its own treatment.

Controls or taxes on capital inflows

The case for controls or taxes on capital inflows is almost invariably the case against the alternatives. Specifically, if the host country believes that there are high costs or binding constraints that limit its recourse to the more conventional policy responses to capital inflows (nominal exchange rate appreciation, sterilization, fiscal restraint, and tightening up the regulatory and supervisory framework), then controls or taxes on capital inflows will carry some appeal. Economic theory even suggests that there are certain circumstances under which imposition of such controls could be welfare enhancing. The "theory of the second best" tells us that if there is a distortion in place that cannot be removed, then introduction of an offsetting distortion may improve welfare. For example, if the bulk of capital inflows financed highly

[34] For purposes of comparison, this ratio hit 7-9 percent in three Nordic countries (Finland, Norway, and Sweden) at the peak of their banking problems in 1992, and 6 percent in the United States in 1991.

[35] More recently, banking system strains in Mexico and Argentina also required significant official support operations.

speculative investments in the real estate sector and if the host-country government had a consistent track record of bailing-out all such large failed investments, then a ceiling or tax on capital inflows could be justified as second best. It would not be as good as eliminating bail-outs and allowing capital inflows, but it would be better than permitting more inflows cum bail-outs.

No host country has made controls or taxes on inflows the centerpiece of its economic policy during the surge period, but quite a few (Chile, Colombia, Indonesia, Mexico, Thailand) have employed such instruments as part of their arsenal. These impediments have taken a variety of forms, including: high reserve requirements on new or existing credits and deposits from abroad, ceilings and/or required authorization for foreign borrowing by banks and public enterprises, imposition of withholding taxes on foreign exchange receipts, higher commissions on swap operations, and prohibition of interest payments on convertible bank accounts held by non-residents in the host country.

When you cut to the chase, there are two key questions about use of such controls or taxes: first, will they be effective in reducing inflows; and second, even if they are effective, will they be desirable on a broader cost-benefit calculus?

On effectiveness, the existing literature suggests that controls or taxes can slow inflows in the short term (up to six months or a year) but that this effect decays as market participants search out and find channels of evasion. Under or over-invoicing of trade, substitution from prohibited instruments and highly taxed institutions to permitted and less taxed ones (from portfolio flows to foreign direct investment, and from banks to nonbanks), and more intensive use of parallel exchange and financial markets, often characterize such evasion. The greater the incentives to evade the controls, the more difficult it will be to stop it. Mathieson and Rojas-Suarez [1993], after studying the experience of both industrial and developing countries with capital controls over the past two decades, conclude that the effectiveness of controls has declined over time because the transactions costs of moving funds have decreased while the incentives for doing so have gone up.[36]

Typically, the host country finds that to restrict the opportunities for substitution and evasion, it has to widen progressively the scope of the controls. For example, Chile broadened the coverage of its higher reserve requirements three times after it was first introduced in June 1991 (Schadler et al [1993]). Yet as the scope of the restrictions are broadened, it becomes more likely that "good" flows (e.g., trade credits) get penalized along with "bad" flows (e.g., hot money). What's more, once countries have made the move to deregulation of capital flows, they

[36] The literature does not address the question of whether controls on capital inflows are more effective than those on capital outflows. It is worth noting that none of the three countries (Spain, Portugal, and Ireland) that introduced or tightened capital controls during the 1992 ERM crisis (to slow outflows) were successful in avoiding a devaluation; in addition, each of them dropped these restrictions a short time after the crisis (see Goldstein et al [1993]). On the other hand, the experiences of Chile and Malaysia seem to suggest some effectiveness for controls, at least in the short-term, in reducing the volume of inflows.

find that they no longer have the administrative apparatus needed to police compliance with new controls.

Even if controls and/or taxes were effective in slowing capital inflows over the medium term, host countries would still need to decide whether it was in the their long-term interest to impose them. For the foreign investor, imposition of controls/taxes reduces liquidity in the domestic market, and more generally, increases the perceived risk of doing business in that market. As such, the foreign investor is going to demand to be compensated for this increased risk by asking for a premium on the host country's debt and security obligations. Unfortunately, the existing literature doesn't really tell us how large that premium would be for the kind of controls/taxes imposed by host countries in the 1990s. Nevertheless, the greater the present and expected future reliance on foreign investors to fund the government's debt and to help finance domestic investment, the more costly would any such increase in the risk premium be. These longer-run costs have to be weighed against any gains that controls might offer on the prudential and macroeconomic stability fronts.

V. Lessons

At the risk of ignoring some themes and oversimplying others, three lessons stand out from the preceding discussion of the causes and consequences of large capital inflows to developing countries.

Lesson number one is while there are legitimate grounds for optimism in the longer-term outlook for private capital flows to developing countries, there is little to suggest that the volatility that has characterized past flows has will go away. Accordingly, in designing their policy strategies to deal with this volatility in private capital flows, there is a premium to be put on credibility, resiliency and flexibility.

To be sure, the surge of private capital flows to developing countries in the 1990s is one reflection of the recognition in the industrial countries that parts of the developing world offer enormous long-term commercial opportunities for businessmen and investors. Developing countries have increased significantly their shares of world output and of world trade over the past fifteen years.[37] Looking down the road, potential growth rates in the high-inflow developing countries are widely regarded to be much above those in industrial countries. Progress in macroeconomic and structural policy reform in host countries, along with reductions of their external debt burdens, has boosted their creditworthiness and helped both to induce the

[37] According to the IMF [1995], the share of developing countries in global output (using purchasing-power-parity exchange rates) was 39 percent in 1993, up from 31 percent in 1984; if transition economies were added to that camp, that (1993) share would rise to about 45 percent. Trade shares of the developing countries are lower but follow a similar trend to that of output shares.

return of flight capital and to attract new more conservative institutional investors. The globalization of production, sourcing, and marketing decisions, the growing maturity of the market for developing-country securities, and the positive effect of regional and global trade liberalization on prospects for developing-country exports, have operated in the same direction. Because returns on emerging market securities have been high and weakly correlated with those in industrial countries, and because institutional investors in the major creditor countries now have such a small share (1-2 percent) of their portfolios invested in emerging market securities, this share could well rise appreciably (double or quadruple) over the next decade or so. Moreover, since the portfolios of these investors are so large, such an increase in the weight of emerging markets would translate into a significant addition to net capital flows.

At the same time, some of the changes in the nature of private capital flows to developing countries that have taken place since the last surge in the mid-to-late 1970s, have underlined the potential for short-term volatility. Consider the shift away from bank loans to portfolio capital and foreign direct investment. Since holders of portfolio capital are well diversified, there is a presumption that a sharp decline in bond and equity prices in emerging markets would translate into only a modest decline in their wealth and thus pose less of a systemic threat in creditor countries than did the bank insolvencies in the last debt crisis.[38] This should aid stability of flows. But forces working the other direction are likely to be more powerful. Specifically, the greater liquidity of securitized instruments, the now larger exposure of creditors to currency risk, the declining cost of rearranging the asset composition of portfolios, and the pressure on portfolio managers to outperform the market average over short and long time horizons, will probably work to make private flows in the future even more responsive to shifts in the perceived risk/return outlook for countries than they have been in the past.

While it is often assumed that flows of foreign direct investment (or of long maturity instruments in general) are less "reversible" than other types of capital flows ("hot money"), recent work finds scant empirical support for that proposition.[39] The influence of swings in industrial-country interest rates on these private capital flows has already been apparent. On top of this, there are the other traditional sources of volatility, ranging from terms-of-trade changes to variations in the pace and scope of economic policy reform in the host countries. Also, the large size of institutional investor portfolios relative to the capitalization of emerging equity markets means that seemingly modest portfolio reweightings can result in sharp swings in market liquidity and in asset prices.

---

[38] Note too that the decentralized nature of bond and equity holders may also make it more difficult for the official sector to orchestrate a "workout" once a financial crisis occurs; see Cline [1995].

[39] See Claessens et al [1993]. Foreign direct investment, however, may offer other advantages to the host country; see Husain and Jun [1992].

What can host countries do to minimize and/or cope better with such volatility in private flows? For starters, while some factors giving rise to volatility (e.g., changes in international interest rates) are clearly beyond their control, others are not. In particular, creditors will have less reason to bolt if exchange rate, macroeconomic, and structural policies remain on a disciplined course, consistent with sound economic fundamentals. This means, inter alia, avoiding highly overvalued real exchange rates, excessive current account deficits, unsustainable consumption booms, large upsurges in inflation, and rapid runups in fiscal deficits and in external debt-to-GNP ratios. Credible policies don't guarantee stable and secularly rising capital inflows, but they sure help. The scale, terms, and geographic destination of private capital flows are not random.

Resiliency and flexibility also count. If private flows are known to be very sensitive to the stance of monetary policy in creditor countries and if that stance is subject to periodic swings, then there is particular merit in maintaining a healthy cushion of liquid international reserves, in avoiding the rollover risk associated with a heavy reliance on short-term government debt, in minimizing the extent of maturity and currency mismatches, in banks holding adequate capital against market risks, and in preventing a large concentration of loans from developing in interest rate-sensitive sectors.

Flexibility is an ally because large changes in the size and/or direction of flows call for adjustments in economic policies. For example, in the initial stage of a capital inflow, the host country may be able to get by with sterilization operations. But as the size and persistence of the flow increases, sterilization will become more costly and less effective. It will then usually be necessary to tighten fiscal policy to help restrain inflation and aggregate demand, and eventually to "adjust" to the transfer by providing more flexibility to the nominal exchange rate and/or by monetizing more of the inflow. And if the private capital flow reverses direction, flexibility becomes even more essential to accommodate the new realities.

A second lesson is that dealing with large capital inflows is not an area of economic policy that lends itself well to "one size fits all" policy prescriptions. Individual-country circumstances and differences in economic structure matter. As demonstrated earlier, there has been very considerable variation across countries in the policy responses to large inflows. This is no accident. The factors that do and should condition a host country's policy response include: the host country's anti-inflationary track record, the openness of the economy to foreign trade, the degree of irreversibility of trade reforms, the state of public finances (both in terms of the current fiscal deficit and the ratio of external and internal government debt to GDP), the size and liquidity of the domestic bond market, the health of domestic banks and the degree of competition from non-banks, the flexibility of fiscal policy, the quality of the regulatory and supervisory framework over financial firms and activities, and the market's perception about the host country's longer-term commitment to deregulation and policy reform.

Finally, lesson number three is that, country differences not withstanding, host countries need to respect the basics of adjustment and finance in designing their policy response to large inflows.

On exchange rate policy, host countries that want to continue to use the nominal exchange rate as their key nominal anchor and that don't want to accept much of an appreciation in their real exchange rate, have to be prepared to implement some tightening of fiscal policy. This is the most reliable way to reduce aggregate demand, to keep inflation in check, and to limit the deterioration in the current account. Sterilization operations can substitute for this fiscal tightening in the short term but not in the longer term. Host countries who are prepared to allow the nominal exchange rate to appreciate -- be it via managed floating or via adjustments in the exchange rate band -- have more leeway because the nominal appreciation will reduce the foreign demand for home assets and will have a contractionary effect on aggregate demand and inflationary pressures. As highlighted by the Mexican economic crisis, whatever the advantages of using the nominal exchange rate as an anchor against inflation in the early stages of disinflation, delaying for too long the move to greater exchange rate flexibility in the face of a deteriorating competitive position and a large and rising current account deficit risks having the markets force a less orderly and more costly correction.

With respect to sterilization policy, the domestic interest will be higher and the size of the inflow will be larger with sterilization than without it. This does not mean that sterilization should be avoided. In fact, as laid out in Section IV, sterilization can be a valuable policy instrument during the early stages of inflow in moderating or even offsetting the induced expansion of domestic credit. Also, if sterilization is implemented via an increase in reserve requirements rather than via open market operations, the host country can for a while escape the fiscal costs by essentially taxing the domestic banking sector. The key however is that with high capital mobility, sterilization becomes more expensive and less effective the longer it is employed. If the inflow continues on a large scale and the scope for fiscal tightening is modest, some monetization of the inflow will usually emerge as the lesser of several uncomfortable alternatives.

Regulatory and supervisory policy often gets less attention than other components of economic policy package. Yet it too is basic in conditioning the consequences of large capital inflows. Whether capital inflows turn out in the end to have been a good thing hinges in large part on how foreign resources are used. It makes a big difference, for example, if banks use their higher reserves to lend for productive investment and human capital formation than if they use them to fund speculative activities that eventually translate into non-performing loans (and perhaps a large public-sector liability as well). Careful assessment of credit risk and of maturity mismatches is crucial if banks are to assist the private sector in earning a rate of return greater than the cost of capital. Similarly, good disclosure and accounting standards are essential for accurate pricing of risk in both banking and securities markets. When financial firms hold adequate regulatory capital, they have a cushion against losses and have lower incentives to take

excessive risks (because more of their own money is at stake). Suitable margin requirements and reasonable constraints on short selling discourage excessive risk taking in derivative markets. These measures would be worth implementing even in the absence of large capital inflows. Large inflows make the expected costs of not implementing these safeguards much larger.

Finally, beyond the short term, today's sophisticated financial markets typically find a way around controls or taxes on capital inflows, especially when the incentives to do so (e.g., large interest rate differentials) are considerable. In addition, imposition of such measures is likely to induce an increase in the risk premium on the host country's securities. Such measures should therefore be used sparingly and selectively. For the most part, their use should be reserved for unfavorable situations where there are no good alternative instruments available for discouraging inflows and when bank intermediation of capital flows is likely to lead to very poor resource allocation (because say, there has not yet been sufficient time or political support for strengthening adequately the regulatory and supervisory framework).
Beyond dealing with surges of capital inflows, each host country has to decide on broader grounds what is the optimal speed with which it wishes to move toward full capital account liberalization.

REFERENCES

Bell, Michael, Hoe Ee Khor, and others. 1993. China at the Threshold of a Market Economy, IMF Occasional Paper, No. 107, Washington: International Monetary Fund, .

Bercuson, Kenneth and Linda Koenig, 1993. "The Recent Surge of Capital Inflows to Asia," IMF, unpublished.

Branch, Donald, 1994, "The Role of Monetary Policy: Where Does Unemployment Fit In?" in Federal Reserve Bank of Kansas City, Reducing Unemployment: Current Issues and Policy Options, Kansas City: Federal Reserve Bank of Kansas City, pp. 169-184.

Calvo, Guillermo, Leonardo Leiderman, and Carmen Reinhart, 1995, "Inflows of Capital to Developing Countries in the 1990s," Journal of Economic Perspectives, forthcoming.

_____, 1994a, "The Capital Inflows Problem: Concepts and Issues," Contemporary Economic Policy XII, July, pp. 54-66.

_____, 1994b. "Capital Inflows to Latin America: the 1970s and the 1990s," in Edmar Bacha (ed)., Development, Trade, and the Environment, London: Macmillan Press, forthcoming.

_____, 1993, "Capital Inflows and Real Exchange Rate Appreciation in Latin America: The Role of External Factors," IMF Staff Papers, vol 40, no. 1, March, pp. 108-150.

Calvo, Guillermo, Ratna Sahay, and Carlos Vegh, 1994. "Capital Flows in Central and Eastern Europe: Issues and Policy Options," IMF, unpublished, October.

Chuhan, Punam, Stijn Claessens, and Niandu Mamingi, 1993, "Equity and Bond Flows to Asia and Latin America: The Role of Global and Country Factors," World Bank Policy Research Working Paper, No. 1160, Washington, July.

Claassen, Emil M., 1993, "A Comment on Maxwell Fry's Paper," in Helmut Reisen and Benhard Fischer (eds)., Financial Opening: Policy Issues and Experiences in Developing Countries, Paris: OECD, pp. 143-165.

Claessens, Stijn, Michael Dooley, and Andrew Warner, 1993, "Porfolio Capital Flows: Hot or Cool?" in Stijn Claessens and Sudarshan Gooptu (eds)., Portfolio Investment in Developing Countries. Washington: World Bank.

Cline, William. 1995. International Debt Reexamined. Washington: Institute for International Economics, February.

Corbo, Vittorio and Leonardo Hernandez, 1993. "Macroeconomic Adjustment to Portfolio Capital Inflows: Rationale and Some Recent Experiences," in Stijn Clessens and Sudarshan Gooptu (eds)., Portfolio Investment in Developing Countries, Washington: World Bank.

Divecha, Arjun, Jame Drach, and Dan Stefek, 1992, "Emerging Markets: A Quantitative Perspective," Journal of Portfolio Management, vol. 19, pp. 41-56.

Diwan, Ishac, Vihang Errunza, and Lemma Senbet, 1992, "The Pricing of Country Funds and Their Role in Capital Mobilization for Emerging Economies, " World Bank Policy Research Paper, No. 1058, December.

Dooley, Michael, 1988, "Capital Flight: A Response to Differences in Financial Risk," IMF Staff Papers, vol 35, no. 3, pp.422-436.

Dooley, Michael, Eduardo Fernandez-Arias, and Kenneth Kletzer, 1994, Recent Private Capital Inflows to Developing Countries: Is the Debt Crisis History?" National Bureau of Economic Research Working Paper, No. 4792, July.

Dooley, Michael, Jeffrey Frankel, and Donald Mathieson, 1987, "What Do Saving-Investment Correlations Tell Us?" IMF Staff Papers, vol. no. 3.

Dooley, Michael and Kenneth Kletzer, 1994, "Capital Flight, External Debt and Domestic Policies," National Bureau of Economic Research Working Paper, No. 4793, Cambridge, July.

Dooley, Michael and Mark Stone, 1993, "Endogenous Credit Seniority and External Debt Values," IMF Staff Papers, vol. 40, March, pp. 226-232.

Edwards, Sebastian, 1991a, "Politica Monetaria y Cambiaria en Colombia," Paper presented for Banco de la Republica, Bogota, Colombia, December.

_____, 1991b, "Capital Flows, Foreign Direct Investment, and Debt-Equity Swaps in Developing Countries," in Horst Siebert (ed)., Capital Flows in the World Economy, Tubingen: J.C.B. Mohr.

_____, 1986, "The Pricing of Bonds and Bank Loans in International Markets: An Empirical Analysis of Developing Countries' Foreign Borrowing," European Economic Review, vol. 30, June, pp. 565-589.

Fernandez-Arias, Eduardo, 1994, "The New Wave of Private Capital Inflows: Push or Pull?" World Bank Policy Research Paper, No. 1312, Washington, June.

Fernandez-Arias, Eduardo and Peter Montiel, 1995. "The Surge in Private Capital Inflows to Developing Countries," World Bank Policy Research Working Paper, No. 1473, Washington, June.

Folkerts-Landau, David, Gary Schinasi, and others, 1995, "Effect of Capital Flows on the Domestic Financial Sectors in APEC Developing Countries," in Mohsin Khan and Carmen Reinhart (eds)., Capital Flows in the APEC Region, IMF Occasional Paper, No. 122, Washington: International Monetary Fund, March.

Frankel, Jeffrey, 1995, "Have Latin American and Asian Countries So Liberalized Portfolio Capital Inflows That Sterilization is Now Impossible?" Paper presented in the World Bank-American Finance Association Special Session at the annual AEA/AFA meetings Washington DC, December.

Frankel, Jeffrey, 1993. "Sterilization of Money Inflows: Difficult (Calvo) or Easy (Reissen)?" in Roberto Steiner (ed), Latinamerican Macroeconomic Network, Cartagena, Colombia, July.

Frankel, Jeffrey and Andrew Rose, 1995, "An Empirical Characterization of Nominal Exchange Rates," in Gene Grossman and Kenneth Rogoff (eds)., Handbook of International Economics, vol 3, Amsterdam: North-Holland Publishing Co., forthcoming.

Fry, Maxwell, 1993, "Foreign Direct Investment in a Macroeconomic Framework," World Bank Policy Research Paper, No. 1141, Washington, May.

Goldstein, Morris, David Folkerts-Landau, and others, 1994. International Capital Markets: Developments, Prospects, and Policy Issues, IMF World Economic and Financial Surveys, Washington: IMF, September.

_____, 1993, Exchange Rate Management and International Capital Flows, IMF World Economic and Financial Surveys, Washington: IMF, April.

Goldstein, Morris and Michael Mussa, 1994. "The Integration of World Capital Markets," in Federal Reserve Bank of Kansas City, Changing Capital Markets: Implications for Monetary Policy, Kansas City: Federal Reserve Bank of Kansas City, pp. 245-314.

Graham, Edward, 1995, Global Firms and National Governments, Washington: Institute for International Economics, forthcoming.

Hausman, Ricardo, 1993, "Comments on Issues Posed by Portfolio Investment in Developing Countries," in Stijn Claessens and Sudarshan Gooptu (eds)., Portfolio Investment in Developing Countries, Washington: World Bank.

Husain, Ishrat and Kwang Jun, 1992, "Capital Flows to South Asian and ASEAN Countries: Trends, Determinants, and Policy Implications," World Bank Policy Research Paper, No. 842, Washington, January.

International Monetary Fund, 1994. World Economic Outlook. World Economic and Financial Surveys. Washington: International Monetary Fund, May and October.

_____, 1995. World Economic Outlook. World Economic and Financial Surveys. Washington: International Monetary Fund, May.

Ito, Takatoshi, David Folkerts-Landau, and others, 1995, International Capital Markets: Developments, Prospects, and Policy Issues, World Economic and Financial Surveys,
Washington: International Monetary Fund, forthcoming.

Jun, Kwang, Frank Sader, Haruo Horaguchi, and Hyuntai Kwak, 1993, "Japanese Foreign Direct Investment," World Bank Policy Research Paper, No. 1213, Washington, November.

Kenen, Peter, 1993, "Financial Opening and the Exchange Rate Regime," in Helmut Reisen and Bernhard Fischer (eds)., Financial Opening: Policy Issues and Experiences in Developing Countries, Paris: OECD.

Khan, Mohsin and Carmen Reinhart (eds)., 1995. Capital Flows in the APEC Region. IMF Occasional Paper No. 122, Washington: IMF, March.

Kiguel, Miguel and Leonardo Leiderman, 1994, "On the Consequences of Sterilized Intervention in Latin America: The Cases of Colombia and Chile," International Monetary Fund, unpublished.

Kleinman International Consultants, 1993, Fifth Annual Emerging Stock Markets Survey, November.

Mathieson, Donald and Liliana Rojas-Suarez, 1993. Liberalization of the Capital Account: Experience and Issues, IMF Occasional Paper, No. 103, Washington: International Monetary Fund, .

Mishkin, Frederic, 1994, "Preventing Financial Crises: An International Perspective," National Bureau of Economic Research Working Paper, No. 4636, Cambridge: National Bureau of Economic Research, February.

Montiel, Peter, 1993, "Fiscal Aspects of Developing Country Debt Problems and Debt and Debt-Service Reduction Operations," World Bank Policy Research Working Paper, No. 1073, Washington, January.

Mussa, Michael, 1990. Exchange Rates in Theory and Reality. Essays in International Finance, No. 179, Princeton NJ: International Finance Section, Princeton University.

Reisen, Helmut, 1993a, "Southeast Asia and the Impossible Trinity," International Economic Insights, May/June, pp. 20-23.

_____, 1993b, "Macroeconomic Policies Toward Capital Account Convertibility," in Helmut Reisen and Bernhard Fischer (eds)., Financial Opening: Policy Issues and Experiences in Developing Countries, Paris: OECD.

Reisen, Helmut and Bernhard Fischer, 1994, Financial Opening: Why, How, When?, Occasional Paper, No. 55, San Franciso: International Center for Economic Growth.

Rojas-Suarez, Liliana and Steven Weisbrod, 1994, "Financial Market Fragilities in Latin America: From Banking Crisis Resolution to Current Policy Challenges," IMF Working Paper, No. 94/117, Washington: International Monetary Fund, October.

Schadler, Susan, Maria Carkovic, Adam Bennett, and Robert Kahn, 1993. Recent Experiences with Surges in Capital Inflows, IMF Occasional Paper No. 108, Washington: IMF, December.

Tesar, Linda and Ingrid Werner, 1993, "Home Bias and Globalization of Security Markets," University of California at Santa Barbara, unpublished.

Wadhwani, S. and M. Shah, 1994, "Emerging Giants, Globalization, and Equities," Portfolio Strategy, New York: Goldman Sachs.

Wang, Yan and John Schilling, 1995. Managing Capital Flows in East Asia, World Bank Discussion Paper, Office of the Vice President East Asia and Pacific Region, Washington: World Bank, May.

World Bank, 1994. World Debt Tables: External Finance for Developing Countries, 1994-95, vol 1. Washington: World Bank.

_____, 1995. Global Economic Prospects and the Developing Countries. Washington: World Bank.

Policy Research Working Paper Series

	Title	Author	Date	Contact for paper
WPS1491	Equilibrium Incentives for Adopting Cleaner Technology Under Emissions Pricing	Peter W. Kennedy Benoit Laplante	August 1995	E. Schaper 33457
WPS1492	Trade Policies, Macroeconomic Adjustment, and Manufactured Exports: The Latin American Experience	Sarath Rajapatirana	August 1995	J. Troncoso 37826
WPS1493	Migration and the Skill Composition of the Labor Force: The Impact of Trade Liberalization in Developing Countries	Ramón López Maurice Schiff	August 1995	J. Ngaine 37947
WPS1494	Adjustment and Poverty in Mexican Agriculture: How Farmers' Wealth Affects Supply Response	Ramón López John Nash Julie Stanton	August 1995	J. Ngaine 37947
WPS1495	Raising Household Energy Prices in Poland: Who Gains? Who Loses?	Caroline L. Freund Christine I. Wallich	August 1995	G. Langton 38392
WPS1496	Reviving Project Appraisal at the World Bank	Shantayanan Devarajan Lyn Squire Sethaput Suthiwart-Narueput	August 1995	C. Bernardo 37699
WPS1497	Public Choices between Lifesaving Programs: How Inportant are Lives Saved?	Maureen L. Cropper Uma Subramanian	August 1995	A. Maranon 39074
WPS1498	Decentralized Rural Development and Enhanced Community Participation: A Case Study from Northeast Brazil	Johan van Zyl Tulio Barbosa Andrew N. Parker Loretta Sonn	August 1995	M. Williams 87297
WPS1499	The Dynamics of Poverty: Why Some People Escape from Poverty and Others Don't—An African Case Study	Christiaan Grootaert Ravi Kanbur Gi-Taik Oh	August 1995	A. Sachdeva 82717
WPS1500	Agricultural Trade Liberalization in the Uruguay Round: One Step Forward, One Step Back?	Merlinda D. Ingco	August 1995	J. Ngaine 37947
WPS1501	Are Partner-Country Statistics Useful for Estimating "Missing" Trade Data?	Alexander J. Yeats	August 1995	J. Ngaine 37947
WPS1502	Active Labor Market Policies in the OECD and in Selected Transition Economies	Hartmut Lehmann	August 1995	WDR 31393

Policy Research Working Paper Series

	Title	Author	Date	Contact for paper
WPS1503	Africa's Growth Tragedy: A Retrospective, 1960–89	William Easterly Ross Levine	August 1995	R. Martin 39120
WPS1504	Savings and Education: A Life-Cycle Model Applied to a Panel of 74 Countries	Jacques Morisset César Revoredo	August 1995	N. Cuellar 37892
WPS1505	The Cross-Section of Stock Returns: Evidence from Emerging Markets	Stijn Claessens Susmita Dasgupta Jack Glen	September 1995	M. Davis 39620
WPS1506	Restructuring Regulation of the Rail Industry for the Public Interest	Ioannis N. Kessides Robert D. Willig	September 1995	J. Dytang 37161
WPS1507	Coping with Too Much of a Good Thing: Policy Responses for Large Capital Inflows in Developing Countries	Morris Goldstein	September 1995	R. Vo 31047
WPS1508	Small and Medium-Size Enterprises in Economic Development: Possibilities for Research and Policy	Sidney G. Winter	September 1995	D. Evans 38526
WPS1509	Saving in Transition Economies: The Summary Report	Patrick Conway	September 1995	C. Bondarev 33974